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THE UNIVERSITY OF ALBERTA

THE NOVICE EXPERIENCE OF ORIENTEERING: A CASE STUDY

by

ANNE ANTHONY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF SECONDARY EDUCATION

EDMONTON, ALBERTA

FALL, 1987

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Orienteering Association of B.C.

1987 09 21

To Whom It May Concern:

Ms. Anne Anthony has informed our association that she has incorporated a number of Orienteering maps into the body of her dissertation. Ms. Anthony has been a long standing member of our association and we applaud her efforts to incorporate her studies of students and the sport into the corpus of higher learning. She has our unreserved permission to use the orienteering maps and any other related materials as she sees fit to pursue her academic goals.

Should you have further questions to direct to regarding this matter please do not hesitate to contact me.

Very truly yours,

Colin Preston

Colin Preston
OABC Executive Secretary

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Dated: October 14, 1987

" . . . Two roads diverged in a wood, and I —
I took the one less travelled by,
And that has made all the difference."
Robert Frost - 1916

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate studies and Research, for acceptance, a thesis entitled The Novice Orienteering Experience: A Case Study submitted by Anne Margaret Anthony in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Supervisor

External Examiner

Date:

I dedicate this thesis to my family in England, to my parents, Joan and Hugh, to my sisters, Jennifer and Rosemary and their respective families, for their continued encouragement, love and faith in me.

Abstract

This case study explores the sport of orienteering from the perspective of novice students who participated in a program designed to allow them to experience this environmentally based activity. During an eleven lesson unit, the students learned fundamental skills of navigation using map and compass. This experience culminated with an orienteering event held in an outdoor setting that was unknown to the students.

For the purposes of this study the researcher spent six months with grade 11 students in an outdoor oriented physical education program. Proximity of the small urban school to an extensive forested area provided an ideal setting for the study. In this context, the study question, "What is it like to orienteer as a novice?" was posed to the students.

To gain a comprehensive response to the case study question required the use of a research design that relied upon an interlocking paradigm incorporating the study context, multiple methodologies and the sport of orienteering. The role of a case study researcher evolved from orienteer to participant observer to orienteering teacher. The observation component of this approach permitted understanding of the study context over an extended period of time. After reflection, the students described their orienteering experiences verbally and in writing. The researcher was then able to provide an interpretation from their transcribed texts.

Thematic analysis revealed the shape of the students' orienteering experiences. Six themes summarizing the multi-dimensional character of

orienteering emerged: navigation, physicality, awareness of self-individuality, competition within participation, time-space relationship and environmental awareness. The findings suggest that orienteering was a holistic learning experience for the participants of this study.

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research literature that was not generally available through normal university channels.

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CHAPTER 1: INTRODUCTION

What is it like to orienteer as a novice? This innocent question may seem trivial to the uninitiated. However, to consider the question more carefully is to confront issues of the complexity of human experience and meaning. A more primary question concerns the notion of orienteering itself. What is orienteering? In Webster's dictionary (1980) it is defined as "A cross-country race in which each participant uses a map and compass to navigate a way between checkpoints along an unfamiliar course" (p. 803). This dictionary statement provides a starting point towards an understanding of this unique outdoor activity.

What is Orienteering?

Orienteering is a travelling navigational search. This physical endeavour is experienced in a natural outdoor environment, ideally an undulating forested landscape, wherein each orienteer follows a cross-country route away from any well-defined trail system. The challenge is to complete a prescribed course in the least amount of time by locating a sequence of orange and white control flags. The orienteer's route selection is generally determined by visual appraisal of the terrain, interpretation of a map and recall of previous navigational experience. In these ways, it is possible to leave the relative security of a trail and negotiate a route through unknown terrain towards an intended destination, the next control flag marking a specific feature in the forest. Orienteering is a foot race against time that integrates the ability to run with efficient use of map and compass,

with precise powers of observation, and with shrewd navigational decision making.

The Setting

Orienteering is an environmentally based activity which takes place outdoors in a diversity of natural environments. An appropriate setting must provide both navigational and physical challenge to the orienteer. Thus, integral dimensions of an orienteering area include such elements as elevation changes and contrasting density of vegetation within a locality of several square kilometers. Environmental similarities are found in all orienteering settings, although each location is unique to itself. Diverse landscapes are a vital part of any orienteering experience and constitute the setting that is the grounding for the sport.

The Map

Described in simplistic terms, a map is essentially a picture of the landscape. Orienteering maps are very highly detailed topographical representations of extensive semi-wilderness areas. They are specifically designed for the sport and ideally are produced in colour. Each of five colours represents a different dimension of the landscape as it appears on the map: water systems are blue; vegetation is green; contours are brown; open areas are yellow and man-made features are black. The map is of ultimate importance to any orienteering experience because skillful map interpretation brings together a visual impression of immediate surroundings with a diagramatic representation that facilitates solution of navigational problems for the orienteer; albeit, the map is the guide in this travelling search.

The Compass

The other navigational tool used in orienteering is a compass. It

provides "geographic" direction, if correct map orientation is confirmed. When compass and map are used together, the resulting information provides a basis for navigational decisions. A constant challenge confronting orienteers is how best to travel along a selected route following a specific compass bearing. Skillful use of navigational tools, namely, map and compass, allow this challenge to be successfully met by the orienteer.

Navigation: Way Finding

Navigation, in the context of orienteering, requires efficient use of map and compass. The map and compass in the hands of the orienteer must always be magnetically oriented to the north. Temporary disorientation in the form of loss of contact between map and surroundings can result in navigational difficulties. It is essential to be consciously in accord with one's map and be able to identify one's precise location at all times if way-finding is to be facilitated. Effective navigation is dependent upon one's ability to select an optimal route through careful calculation and analysis of directional options. Way-finding success is dependent upon sufficient navigational skills, physical ability and decision making powers that allow an orienteer to react positively in an unknown setting using a map and compass.

Individual Activity: Being Alone

Orienteering is an individual sport. It is an activity where personal success is determined by one's level of experience, physical fitness and ability to make effective navigational decisions. Each orienteer is challenged personally by time pressures of the competition. Sound decisions based on evidence of map and terrain will result in travelling for the shortest amount of time while locating all control flags and completing the course. Since being alone is a significant,

element of orienteering all navigational decisions are made independently of others.

An Unknown Environment

No two orienteering areas are identical. Different settings may have similarities, but every location is unique in its own way. Thus, the "feel" of orienteering is a different experience in each locality. Each orienteering event provides participants with a sequence of unique challenges, wherein the most appropriate route choice is selected in conjunction with evidence from the map and past navigational experiences. An unknown environment provides a test to all orienteers regardless of their level of navigational expertise. The challenge of each new setting, its distinctive terrain and the unknown all contribute to the phenomenon of orienteering.

The sport of orienteering represents a multi-dimensional experience that incorporates competent use of navigational tools, a proficient level of physical fitness and effective implementation of navigational skills. Each orienteer participates alone and endeavours to determine the fastest route through an unknown outdoor environment.

CHAPTER 2: REVIEW OF ORIENTEERING LITERATURE

Introduction

Since the inception of orienteering in Sweden during the early nineteen hundreds, the majority of European countries have been committed to the development of this sport at all levels of participation. It is not surprising to discover that these same countries are pioneers and leaders in the area of orienteering research.

A major impediment in accurately determining the extent of orienteering research on a global basis was the inability of western Canadian universities to access European data banks. I was soon to discover that the scope of orienteering studies was quite limited from this source. I sensed that there must be a wealth of knowledge about orienteering that was not readily accessible through recognized university library channels. Early in 1985, I began communicating with orienteers from around the world, particularly in Europe. Gradually, over a period of several months, I was able to create a "network" of fellow orienteers from Canada, United States, Australia, New Zealand, Great Britain, Sweden, Denmark, Germany and Switzerland. Their responses were informational, supportive and enthusiastic. These expanding sources of information related to all dimensions of orienteering and proved to be an exciting development for this study.

The discussion of orienteering research that follows has been sub-divided into the following broad categories: historical development/early sport philosophy; natural outdoor environment

(vegetation damage and cartographic/geographic dimensions); psychological domain; physiological aspects; sociological-cultural dialogue; competition (technical analysis) and finally, instructional methods/curriculum integration.

Historical Development/Early Sport Philosophy

Most of the documents and books cited in this review include an historical synopsis of how the sport of orientation originated in Scandinavia as a competitive endeavour and describe its subsequent growth throughout Europe. (Later, the term "sport of orientation" was anglicized, so that "orienteering" became the name universally used by orienteers.) The most comprehensive and authentic history of orienteering is provided by Nordenfelt (1979).

In order to clearly analyze the circumstances relating to the origin and evolution of the sport, it was essential to comprehend the three fundamental contingencies that permitted orienteering as a sport to become a reality. The conditions were available outdoor areas, large scale maps and an instrument that indicated north. It was fortuitous that in Scandinavia there were extensive and undulating forests that were ideally suited to orienteering. Sweden has a unique law, "Every-man's Right," that states the countryside belongs to all people. It was this natural setting that was conducive to nurturing the birth of a sport for everyone. Nordenfelt suggested that several psychological factors were responsible for the inception and growth of orienteering. These were cited as an instinct to discover, longing for adventure, and the "Green-wave" or "back-to-nature" movement inspired by Rousseau in France during the 19th century (p. 10). Humans have always possessed a natural instinct to discover that which is beyond what is already known. Down through the centuries many explorers have set out into unknown territory

and across uncharted seas. In modern times, orienteering has provided an opportunity to discover natural surroundings and more specifically respond to an outdoor forested environment. Many "folk-heros" through the ages have captured the imagination by reinforcing a longing for adventure. Sadly, the need to feel excitement and to experience unknown challenges in an outdoor setting have been severely repressed during the past century of intense mechanization. However, a sense of adventure may be rekindled as orienteering indirectly responds to an innate and universal need that allows a return to the roots of humanity in the natural habitat.

Between the world wars when orienteering was predominantly a European sport, it is interesting to note how the sport in Sweden and Switzerland developed separately. Differences reflected national characteristics, topography and political climate of the times. In Sweden, physical well-being of citizens was not only a personal concern, but a matter of national pride. A desire for a high level of physical fitness was reflected in the military and educational systems. Thus, orienteering as an individual pursuit responded to this nationalistic urge to achieve bodily strength, physical endurance and a determination to succeed. In Switzerland, an inner struggle for national unity between the Cantons was realized through a particular stress on social responsibility. This inheritance was reflected in the educational system and specifically in orienteering, where there was an emphasis on team participation. These underlying nationalistic philosophies originally contributed to a different developmental pattern of orienteering in each country. Subsequently there was a unification of goals within the sport.

Orienteering became a trans-atlantic sport when it spread to the United States and Canada in the 1940's. In these early years, orienteering was unorganized. It was introduced by agencies such as the Boy Scout Movement and was incorporated into outdoor recreational programs. Any development of the sport was dependent upon the interest of individuals and this situation resulted in spasmodic development in North America. Maier (1958) endeavoured to determine the values of orienteering through a survey of those involved in the sport at the time. Questionnaire results identified recreation, learning exploration techniques and enrichment of various school subjects, as being important components of orienteering participation.

Orienteering growth was intermittent during this time in Eastern Canada and was non-existent in the west. However, two orienteering "pioneers" provided the necessary impetus for expansion of the sport. In the 1960's, Professor "Sass" Peepre included it as a demonstration sport at the national track and field clinics held annually at the University of Guelph. Swedish born Bjorn Kjellstrom, the inventor of the liquid filled housing of the Silva compass ("Silva" is Latin for wood), was responsible for organizing demonstration orienteering events in Eastern Canada (Schrodt, Redmond & Baka, 1980). Gradually, the sport was introduced into the school system in Ontario. In 1967 the Canadian Orienteering Federation (COF), with "Sass" Peepre as it's first president, was formed (Hirtes, 1979). Subsequently, within another decade, eight provincial associations had been established and orienteering became the newest sport from coast to coast in Canada.

Natural Outdoor Environment

Vegetation damage

Concern is frequently expressed about potential environmental damage

caused by orienteers running through natural vegetation during their participation in competitive events. Kardell (1978) reported there had been ongoing research over the past half century that had reflected concern about preservation of natural outdoor environments in many countries. Although Kardell made several specific recommendations in order to avoid unnecessary vegetation damage during orienteering competitions, he also pointed out that,

> A single orienteering competition does not damage more than a maximum of 1% of the vegetation within the area used for the competition. (p. 13)

This conclusion was supported by Peepre (1980) when he commented upon conditions in Canada,

> Orienteering is only one recreational use of the forest and is by nature, because of the dispersal of orienteers in all directions, of low [environmental] impact. (p. 12)

Cartographic and geographic dimensions

The first maps used in orienteering were topographical. Preparation of specialized orienteering maps has evolved over several decades from basic black and white ground plans to technically sophisticated multi-coloured maps. Early maps were produced from either direct photocopies or enlargements from existing sources such as military, lands department or forestry maps. For orienteering purposes, these maps were inadequate because they lacked detail. The quality of an orienteering experience is correlated to the accuracy and calibre of the competition map (Hogg, 1974).

Palm (1972) identified the purpose of a map as providing specific information about the terrain and to show the way within an area. He stated that orienteering cannot be effectively practised without sport

specific maps of a particular quality and control. It is interesting to note that as Hogg (1985) suggested,

> To many orienteering map makers, producing the map is as much a part of the recreation as is competing on an orienteering course. (p. 63)

As a result, recent cartographic activity reflects an increase in the production of orienteering maps by orienteers. Petrie (1977) ascribed this situation to a unique and fascinating form of "folk mapping" or "hobby mapping" often produced to professional standards (p. 15).

The production of an orienteering map is a complex process because of the specific demands of the sport. Size of the map is of ultimate importance and map-scale will vary according to the level of competition (Hogg, 1974; Petrie, 1977). Petrie cited both accuracy and readability as dependent upon thoroughness in surveillance of the terrain, skill in classifying all features and plotting this wealth of environmental information onto a map. This concept of map specificity was confirmed by Hogg (1985) who stated that,

> The primary criteria in judging the quality of an O-map are its accuracy and its consistency in relation to the terrain. (p. 63)

The map is essential to orienteering participation as its fundamental objective is to communicate spatial relationships inherent in identifying geographic landmarks by which the orienteer's navigational ability will be constantly tested. Thus, the geographer and orienteer both develop "an eye" for their environment as they fulfill their different functional roles within the sport of orienteering (Hirtes, 1979; Kirby, 1970). The map is fundamental because orienteering is an,

> Intense interaction with body, the physical environment and a map, depicting that the environment gives continual feedback on map utility to map user. (Linthicum, 1984, p. 14)

Development of cartographic understanding provides dynamic links between the orienteer, the environment and the map. This relationship is important in the map making process for orienteering. Bloemer (1977), in his study, concurred by stating that,

> The map is key to successful course following, for it shows those elements of the landscape which are relevant and serve as guideposts or landmarks for the orienteer. (p. 48)

It is the representation of "ground truth" as reflected on the map that is of importance, for without a map the orienteer is powerless; however, with a map, navigation through an unknown environment is a viable enterprise.

To summarize, research has been considerable in these two important dimensions of orienteering. Studies have focused on vegetation damage and have made recommendations of how minimal damage caused by orienteers may be further reduced. Current research in cartography and orienteering reflects the specificity of the map used in this environmentally based sport.

The importance of the map cannot be overemphasized when novice orienteers are learning fundamental navigational techniques because it is complete reliance on the map that provides the basis of understanding for successful course completion. To have students make maps is a realistic way of assisting this process.

Psychological Domain

Much research has been completed by European researchers in the psychological domain within the sport of orienteering. In 1985, the Scientific Group of the International Orienteering Federation, under the leadership of Roland Seiler, formed a world-wide network of orienteers. The group's main purpose was to establish a central location to which all

orienteering research studies, papers and other publications could be sent. The group published the first edition of Scientific Journal of Orienteering in August, 1985. Its purpose was to provide both an international and interdisciplinary review of research in orienteering. In its first edition, reviews of several studies reflecting the psychological domain of orienteering participation were presented.

In one study, Seiler (1985) concluded that cognitive structure of route choice develops during years of competition and training. Experience resulted in better map interpretation and application of information relevant to route selection. This in turn affected self concept, reduced strain and assisted in more consistent navigational performance. In other studies relating to visual attention and concentration, it was noted that mental rehearsal and autogenic training improved concentration. These findings have led to superior orienteering performances by orienteers (Fach, 1985; McNeil, 1981; Whitson & McNeil, 1981).

Effective psychological training reflects a self-knowledge that permits each individual to train effectively in order to bring balance between speed and accuracy to actualize full potential in competition (Thornley, 1982). Individual participants strive for improvement regardless of their level of competition. Holloway (1980) suggested that,

> A mental state conducive to top performance can be attained through mental training just as physiological training is utilized to improve bodily ability. (p. 59)

Kubler (1985) looked more closely at technical skill of an orienteer in order to determine decision making behaviour in relation to strategies concerning route choice. He found that making route choice was

influenced not only by pre-event conditions but also by the emotional disposition of the individual orienteer, influence of others and the point in time of route choice.

In a study to determine pre- and post- performance factors in orienteering, Bird (1975) suggested the necessity of implementing an interdisciplinary holistic approach which would permit exploration of values, activation, personality and social behaviour of orienteers. A self-report instrument was used to collect data and although the results were inconclusive, the fact remains that orienteering is a multi-dimensional experience as the following reflection by Peepre (1974) suggested, "once in the woods the orienteer is on his own, he may feel pressured but that is essentially a personal choice" (p. 4).

Orienteering is aptly named "the thinking sport" which supports the contention that mental attitude and intellectual ability are important contributors to successful navigation for each orienteer. However, these factors are of less importance to novice orienteers.

Physiological Aspects

It may not be universally recognized outside the realm of orienteering that the only true physical skill in this sport is "pedestrian mobility". An ability to travel efficiently through an undulating outdoor terrain is a physical skill important to all orienteers. Body type and level of physical fitness are essential factors that affect endurance and running ability. Somatotype was the focus of a study by Barrell and Cooper (1982) who compared international orienteers to other top class athletes. It was found that if somatotype, height, and weight were considered together, then physiques of both male and female orienteers were found to be comparable with international middle and long distance runners of similar gender.

The incident of physical injury to orienteers was not high (Johannson, 1986). This finding was due to a number of factors. All orienteers are able to decide at which level of competition they will participate, therefore, knowledge of their own past navigational experience and level of physical fitness will determine their course selection for the event. Speed of travel is directly related to navigational skill and if route choice is uncertain, this will most likely be reflected in a decreased rate of travel.

In a study of elite orienteers, Folan (1982) reported that most injuries were minor in nature: scratches, cuts and bruises were mainly the result of poor weather and unusual terrain conditions. Persistence of orienteers to compete before a previous injury has fully healed usually worsened the affected part and this accounted for a number of injuries. It appeared that orienteers, like other athletes, experienced difficulty in knowing when they should not participate due to injury. Outcome of a previous study by Johansson (1986) recommended that a more stringent method to detect injuries be established and that individual differences be recognized as a preventive measure in each orienteer's training program.

Injury in orienteering, as with any physical activity, may be reduced to a minimum when participants train in a comparable situation to their competition venue. Boyes (1986) recommended that "all runners really should be training in conditions similar to that of their particular discipline" (p. 20). Thus, effective "terrain technique" is critical to a high level of physical efficiency in orienteering. Different natural features demand specific mobility techniques and in order to maintain a consistent traveling speed, it is necessary to train in comparable terrain. General physical fitness is not the sole

deterrent to injury, whereas knowledge and ability to effectively transverse a variety of different terrain may reduce injury potential. This is a concept that all competitive orienteers need to consider when designing a training program.

Physiological and performance characteristics of championship class orienteers were studied by Knowlton, et al. (1980). They examined the anaerobic and aerobic power of both female and male orienteers. In addition, a general physical description of athletes was obtained. It was concluded that the anaerobic power in orienteers was consistent with other distance runners; however, their respective aerobic power was considerably below expectations of national class athletes. Explanation for this result was attributed to reported training programs which indicated that less than 10% of the orienteers used interval training and only ran approximately one third of the amount reported by distance runners.

Kaminsky, et al. (1984) in a study sought to analyze "climb" and "distance" in terms of elevation gain and travelling distance. It was concluded that there was no difference in energy expenditure. However, the authors stated that a route following an abrupt climb is preferable to one of a long gradual climb when the change in elevation is equal.

One further study highlighted adaptations that could be made to an orienteering experience for the physically impaired (Langbein, Blash & Chalmer, 1981). It was recommended that more research is needed in the area of orienteering instruction for handicapped persons.

Novice orienteers must understand that their level of participation should relate to amount of training experienced prior to a competition. For, as Fitzgerald et al. (1980) reported after a study focusing upon energy costs, orienteering is a vigorous activity.

Socio-Cultural Dialogue

It has been suggested that many individual sports are becoming part of the "Ecosport Movement" (Johnson, 1974) wherein the emphasis on increased involvement and cooperation reduces elitism and competitive emphasis among participants. In addition, there is a noticeable trend towards environmental awareness as expressed by a need to co-exist with rather than to dominate nature. Wagner (1979) suggested that values held by orienteers were a reflection of this shift in thinking by today's society. He has stated that,

> The sport of orienteering, with its emphasis on individual enjoyment, physical and mental fitness, and a comradeship with nature, might reflect some of the more future oriented aspects of a society that was becoming increasingly concerned with the environment and the harmony of man with nature. (p. 5)

In a study designed to test this assumption, Wagner found that "orienteers are future oriented," more concerned with "being" rather than "doing" and much more concerned with "harmony-with-nature" than "mastery-over-nature". He suggested that, "perhaps the values of orienteers are the wave of the future" (p. 8).

Two national reports that asked the question "Who are the orienteers?" presented some interesting findings. A study by Beylund and Saltin (1974) completed in Sweden provided the following description of orienteering participants. They were well educated, physically healthy, had a tendency to live away from metropolitan areas and held jobs that were not physically demanding. Orienteers had a history of previous involvement in other predominantly individual sports.

A decade later, Thompson (1984) asked a similar question in New Zealand. She found that orienteers were predominantly males from a relatively high level of education and socio-economic status. In

attempting to clarify why people orienteer, Thompson (1984) found that continual participation was dependent upon conditions of immediate locality, attractive area, fine weather, courses catering to all levels of participants, and challenging yet successfully completed courses. It is interesting to note the similarities contained within the findings of both these studies, despite the decade between them. The findings suggest that characteristics of orienteers from a country (New Zealand) in which the sport is comparatively new, differ very little from the orienteers of the originating nation (Sweden).

Thompson (1985) completed a further study for which the main purpose was to determine general characteristics of female participants and the factors which influenced their participation in orienteering. She suggested that diversity of challenge available within the sport of orienteering was an important quality and provided an incentive for a wide range of participants to become involved at their own particular level of navigational experience, physical fitness and maturity. For some, orienteering was a truly competitive and highly physical sport, yet for others, it was an unpressured recreational pursuit.

Although most of the literature related to orienteering described it as a competitive sport, there is another dimension of this activity called TRIM orienteering. TRIM-O was initiated in Norway as Tur-Orienteering in 1966 by Jan Larsen who realized its potential as a recreational pursuit. The fundamental concept of TRIM is to encourage recreational activity for all people, regardless of their fitness level or navigational ability. The purpose is to provide a relatively vigorous and stimulating activity in a forested setting without time pressures of a competitive event. TRIM orienteering makes use of a permanent course

established on public ground, such as a local park, marked out by a sequence of orange and white posts.

Orienteering has a universal appeal wherein fundamental concepts of "way-finding" are experienced through the diversity of the sport itself. It is congruent with current socio-cultural trends relating to the environment and provides opportunity for the young and their families to be involved in a life-time sport.

Competition: Technical Analysis

The majority of written documentation about orienteering is related to the most competitive dimension of the sport called cross-country orienteering. A number of studies used mathematics to determine optional routes in various orienteering events. Tsiligindes (1984) studied Score Orienteering. In this form of orienteering the order in which the controls should be visited was the prerogative of each orienteer. He found that algorithmic methods were proved to be satisfactory "in finding an efficient and computationally feasible method of finding a good, if not optimal solution to the Score Orienteering event" (p. 806). Hayes and Norman (1984) used "a simple functional equation of dynamic programming to generate optimal orienteering routes in mountainous country" (p. 791). The authors surmised that whatever strategies were used by a winning team would probably be the best route for other competitors at their level of navigational competence. In another study, Noott (1985) used a computer to formulate a statistical analysis of orienteering results. His "mathematical equation" analyzed and clarified dimensions of performance. It was suggested that keeping a statistical record of competitive performance would provide consistency because the orienteer would have a clearer understanding of performance expectations. Hanselmann (1977) endorsed the concept that competition results are

useful to provide a clearer definition of performance strengths and weakness.

Barrell and Cooper (1981) examined the proficiency of interpreting contours by orienteers. Subjects of varying levels of orienteering proficiency experienced a battery of visualization, map interpretation and navigational tests. The results suggested that all groups had some proficiency in visualization of terrain shape changes, however, elite orienteers provided a more accurate interpretation under stress-time conditions. Barrell and Cooper concluded that a training program designed to improve map reading ability of orienteers should incorporate exercises to improve contour interpretation.

In a subsequent study (1986) the same authors, systematically analysed the way in which basic map reading skills were used during competition, in an attempt to determine level of map interpretation proficiency and to identify which information was extracted from the map as a whole. It was concluded that a relocation task (identifying position on the map from the shape of the terrain) presented most difficulty regardless of level of proficiency. Further research in this specific area was suggested by Weir (1985) following a study on training specificity in which it was found that "orienteering training programs should replicate the intensity and movement pattern of competition" (p. 19). He further recommended that there is no better method to improve performance than to physically train by running "cross-terrain" and to define a route from a map through mental practice.

Map interpretation is still the crucial factor in navigational excellence, furthermore, analysis of competitive performance and training specificity will benefit orienteers of all levels of navigational experience.

Instructional Methods: Curriculum Integration

There are various texts about how to teach orienteering, however, an arduous search revealed only four theses that were specifically related to an instructional perspective of orienteering. One of the first studies was completed by Manley (1954). This study was threefold. It surveyed the current development of the sport at the time, attempted to evaluate teaching effectiveness and used three methods to determine how best to promote orienteering. It was concluded that practical involvement by participants was the best method of both teaching and promoting the sport.

Quenneville (1979) examined effectiveness of direct and conventional teaching methods and the measurement of cognitive and motor performance in school orienteering. He concluded that there was no substantial difference between methods of instruction and that success in school orienteering was dependent upon ability to integrate cognitive and motor ability. Comparison of teaching methods was also the focus of a study by Sampson (1980), whereby orienteering instruction to college women was provided through the use of multi-media presentation and by a more traditional approach of lecture and demonstration. She concluded that there was no significant difference between these teaching methods.

An article from The Times Educational Supplement, (1952) entitled "Compass and Maps: New School Subject in Sweden" described an instructional process that began with seven year olds during their first year of school and continued until they entered secondary schools at the age of thirteen. It was reported that through simple games the students "gain a sense of direction...and feel at home in open country or forest land".

Maier (1958) commented that orienteering instruction in German schools was indirectly taught through Geography in the schools reflecting "Heimatkunde" which means "knowledge of one's home environment". The concept evoked the systematic use of maps in a variety of activities to encourage understanding of natural signs, vegetation identification and geological formations. The learning progression of orienteering skills using a sound "step-by-step" approach to instruction has resulted in an increased number of elite German orienteers in international competition.

The application of psychological principles to the teaching of orienteering was the intent of a recent study by Maitland (1983). In the implementation of three different teaching models for student instruction, Maitland was unable to distinguish which principle was responsible for improved navigational performance. This same study, after reviewing the status of school orienteering, revealed variance in the frequency and extent of programs for novice participants.

In Sweden, the sport has been part of the curriculum in Primary schools since 1941. Swedish educationalists were enthusiastic about orienteering and stated that,

> It's helped to propogate among school children a love of nature and a more practical approach to the lessons of geography...its greatest contribution to the cause of teaching is that it has suddenly given the subject of map reading a practical and recreative application...a most popular subject in the Swedish school child's curriculum. (The Times Educational Supplement, November 7, 1952)

Orienteering is part of the school curriculum in the majority of countries if there are interested teachers able to provide sound instruction. However, these individuals need support from local school boards to develop comprehensive programs (Dudley, 1983).

In Australia, "as a part of the educative process, orienteering provides a problem solving task that is enjoyed by students of all ages" (Haarsma, 1980). Generally, in school programs, orienteering is taught as a part of units in physical education (Gallery, 1983), while in university recreation programs orienteering provides an interesting supplement to a regular program (Johnson & Rankin, 1978).

During the past decade, the popularity of school orienteering in England has fluctuated and concerned orienteers have suggested that the national association needs to initiate programs to improve the "grass-roots development" (Palmer, 1981). Since the family group is the core of the club system, this factor must be used to encourage consistent participation from school to club (James & Porteous, 1979). In 1984, a new concept of "making orienteering in the forest friendly for children" (Stott, 1986) was introduced in England through the creation of "string events". Young participants are challenged to travel through the forest following a route indicated by string. Modified versions of "String-O" for younger orienteers are now practised in other countries (Fawcett & Henderson, 1987; Koln, 1986; Lowry, 1980; Wilkinson, 1986).

In Scotland, there is a comprehensive three-level instructional program throughout the school system with opportunity to participate at all levels of competition. The local school boards are responsibe for developing orienteering and later promoting club participation (Salisbury, 1986).

Orienteering participation in Canada most often reflects particular teacher's interest. This results in diverse instructional experiences that range from university courses (U.B.C. Calendar, 1987) and a "Forest Adventure" program organized by an Ontario Orienteering Club for young orienteers (Lee & Pearson, 1986). Across the country there is an

expanding network of clubs within each provincial association that serve as a basis of introducing orienteering to the schools by providing instructional clinics and promoting school events. Additional support comes from the numerous texts written about the sport. In 1980, a national Junior Participation program which encouraged young orienteers across the country to earn badges recognizing various levels of participation was started. However, the "soul" of orienteering is to be found most often in a simple activity; a running game in outdoor settings which is fun and has few rules. "The idea of finding flags in the forest appeals to children, accurate times add spice, but they are not the heart of our sport" (Tobby Norris, as quoted by Palmer, 1986).

To conclude, this review of orienteering literature has attempted to portray the diversity and extent of research in the sport. Studies have predominantly focused on the competitive domain, cartographic aspects and cultural dimensions of orienteering. There is an apparent need for additional research in the areas of instructional methods and teaching strategies since none of the school based studies mentioned have given specific consideration to the learner. The implication being that more studies are needed to look at the most appropriate methods of teaching physical activity in outdoor settings whereby students are the focus of attention in individualized activities such as orienteering, so that educators can better understand how learning occurs. This study addresses the issue of student input by recognizing the importance of asking students to describe their learning experiences.

CHAPTER 3 THE STUDY

Introduction

This chapter addresses the study question in terms of the researcher's involvement in orienteering and describes the study context, methodology and thematic analysis.

Coming to the Question

I have vivid memories of my initial encounter with orienteering. On that occasion I became thoroughly disoriented in a wooded area adjacent to a golf course. The impact of that first navigational experience in orienteering made an indelible impression. Several years later, I found myself with an opportunity to teach orienteering for the first time. The setting was a university campus with returning teachers who were attending a physical education methods course during the summer. I introduced orienteering as an activity that could be initiated from a variety of starting points within the curriculum and begun in a familiar environment such as a school campus. During this experience I began to discover the potential for personal development in encountering outdoor settings through physical activity. I was frequently awed by the powerful impact of the environment.

The same summer, Professor "Sass" Peepre of the University of Guelph and founding president of the Canadian Orienteering Federation (COF) made a cross Canada promotional tour to meet with interested individuals and potential leaders in orienteering from the western provinces. Through him, I was sponsored by Recreation Canada to attend the first National Leadership and Development in Orienteering course held at the University

of Guelph in 1974. An exciting and overwhelming week was experienced by 70 orienteers from across Canada. Within months, several British Columbians established a provincial association and I became the founding president. The next five years saw many first time events in the province as orienteering became a more organized sport. The first annual provincial championships were held in 1975 and six years later we hosted the first Canadian championships held in western Canada. Innumerable workshops were held throughout the Pacific Northwest resulting in a club network that linked orienteering centres across the province. Map making developed to the extent where it reflected map production of nationally recognized standards. This had the impact of regulating the quality and consistency of orienteering events regardless of sponsorship. I served on the Board of Directors, Canadian Orienteering Federation, as vice-president (1975) and was chairperson of the national Education committee in 1979.

As I travelled about teaching and promoting this sport, the necessity to produce instructional materials for teachers at all levels of instruction became more apparent. I responded to this need with a variety of materials. Subsequently, I was invited to write a handbook as a resource to the new British Columbia Secondary Physical Education Curriculum Guide in 1980. This was one of the first comprehensive instructional texts published in Canada. Acceptance by the University of British Columbia in 1981 of an orienteering activity course I designed was recognition of a growing interest in the sport. It was an exciting development to teach such a course on the university campus. I later became a coach in the National Coaching Certification program. My experience as an orienteer, teacher and writer in the field of orienteering has resulted in the development of this study.

The Question

This case study will address the following issues and seek to understand their influence upon the question: "What is it like to orienteer as a novice?" The issues are expressed in question form as clarification is sought to reveal the essence of orienteering as experienced by novice participants.

1. How did acquisition of orienteering skills impact upon novice orienteers?
2. What was the nature of the self-learning experiences of novice orienteers?
3. What were novice orienteers aware of in natural outdoor settings?

The Importance of the Question

A case study focusing on the phenomenon of orienteering does not appear in the literature. As a teacher, it is important for me to know what is being personally experienced by each participant, if a true understanding of the orienteering phenomenon is to be revealed. The more that is known about this unique activity, the better it will be understood and taught.

Orienteering as a life time pursuit presupposes the value of physical activity in an outdoor environment. Participation in this environmentally based activity provides opportunity for students to realistically learn and apply their developing life skills in an educational context. Growing interest in leisure time activities, particularly in the outdoors, supports an interest in orienteering. The importance of the acquisition of life skills in navigation can be valuable not only in the sport of orienteering, but in other popular outdoor pursuits enjoyed in wilderness areas by many today.

This unusual sport is becoming better known and current research reflects an interesting range of studies in specific domains of orienteering. In this case study, it is hoped to reveal a better understanding of the essence of the orienteering phenomenon as experienced by novice participants.

Chronology of Events: Study Context

This study involved twenty-four Grade 11 students whose physical education classes I attended for a period of six months prior to teaching them orienteering. My interaction with these students was not only extended over a comparatively long period of time, but my role as participant observer allowed my relationship with them to change from being a passive observer to that of teacher.

In late August 1984, initial contact was made with a physical education teacher in a secondary school that had a population of approximately three hundred students. Proximity to the university campus made my acceptance into this particular school gratifying. The school administration was supportive of my proposal with the comment, "You are welcome at any time." Within a month, after receiving approval of my research application from both university and school board, I made an official entry into the school. In the Grade 11 physical education program the main emphasis was the outdoors. A wide range of activities experienced in off-campus settings, provided an ideal opportunity for these students to be introduced to the potentiality of several life-time sports. I looked forward to my involvement in this innovative program, accompanying the students on their field trips and teaching orienteering.

In early October, I met with the students. Their teacher had previously spoken to them about the study. Consequently, they had some

understanding of my presence in their school and, more particularly from my perspective, the necessity of my establishing a sound relationship with them over the next few months. During the initial meeting I introduced myself, explained the purpose of my study and suggested that I would appreciate their cooperation. It was clarified that I would attend all their regular Physical Education classes providing there was not a time conflict with my own teaching commitments on campus. A rotating schedule was utilized in the school so an occasional conflict was to be anticipated. It was my intention to remain in the school for a period of six months. A friendly dialogue followed whereby several students asked questions about the specifics of the study. They appeared to be interested in the proposed study and myself. I was gratified with my apparent friendly and uncomplicated entry into the school.

Sources of Gathering Data

The following week I introduced a written assignment that focused on early recollections of an outdoor experience. The students were asked to write a brief description of their favorite play space. A few literary guidelines - use of the first person, providing a descriptive word picture, and not being too mindful of grammatical errors or misspelled words - were suggested. The intent of this assignment was to encourage some reflection on an outdoor experience of personal interest (see Appendix A). In early November, I introduced another individualized writing project. On this occasion, the students were asked to keep a journal for a week (seven consecutive days). They were each provided with a small notebook in order to record reflections of particular incidents in which they had experienced a conscious interaction with their surroundings, particularly in an outdoor setting (see Appendix B).

The purpose of this activity was to raise the level of conscious environmental awareness as experienced in normal everyday living.

Throughout the study there were numerous opportunities for spontaneous dialogue with the students. These casual conversations provided a framework on which a sound rapport was established as the students and I became acquainted. I observed this group of students in a variety of settings, since their physical education program was diversified in the range of activities and the "action-specific" locations (see Appendix C).

I kept field-notes (see Appendix D) describing the various outdoor experiences such as a mountain hike, cross-country ski tour and rock climbing trip, as well as the orienteering experiences that took place in a forest adjacent to the school and in the ocean-side park where the final event occurred. Opportunity to be part of these experiences in each particular setting allowed me to get to know the group better and through dialogue clarify their understanding of recently shared outdoor experiences.

In March 1985, the eleven lesson orienteering unit (see Appendix E) began. Written reactions and reflective comments on shared navigational experiences were requested from the students during this time. Six weeks later the orienteering unit concluded with a cross-country event in Lighthouse Park, a semi-wilderness park located an hour drive from the school. When the students had completed their first orienteering competition, I asked them to reflect on their personal encounter with this sport. They were asked to write a two page essay entitled "What is it like to orienteer?" describing their individual experiences of orienteering over six weeks (see Appendix F). A one week deadline was assigned for completion of their papers. On the basis of the detailed

description in these essays I selected twelve students (six females and six males) for interviews and these were scheduled during early May. Due to unforseen time constraints they were interviewed in pairs and each student selected a partner for the process. The focus of the first round of interviews was centered upon the written reflections in which each student had readily shared his/her own experiences through vivid personal descriptions. There was an easy flowing dialogue as the students conversed with me and with one another after an initial "starter" question. This interview pattern was followed with an occasional more specific "pointer" to re-direct the conversation. Thus, the students were able to share impressions of their recent orienteering encounters in a friendly, relaxed and open dialogue (see Appendix G).

As I listened to the tapes and subsequently read the transcripts I re-lived the shared dialogue. In so doing, I discovered there were several areas of discussion that would benefit from further elaboration. Thus it became necessary to interview the students again. I was delighted to return to the school in the Fall and to meet with the students who were now in Grade 12. An opportunity presented itself in late September to meet with the entire student group. Meeting times were arranged for each couple during the next two weeks. Subsequent conversations reflected some enlightening exchanges with much of the dialogue clarifying issues and expanding ideas. Reflection after three months proved to be a revealing "tool" providing the students with an opportunity to return for another "look" at their orienteering experiences in Lighthouse Park.

This study presents reflective descriptions of the novice participants after a first time orienteering experience. In addition, the study incorporates informative written responses from experienced/

elite orienteers across Canada. To include these reactions from seasoned orienteers enhanced the interpretation of the student participants' experience. In a number of instances the reflections were similar regardless of the level of expertise and the recollections of the more experienced orienteers helped to both verify and clarify those of the novice participants. Similarly, the literature review provided personalized and insightful descriptions that were incorporated to add a final reflective statement on the nature of orienteering.

Self as Instrument

What does being an "instrument" in research mean in relation to the students and my role as their orienteering teacher? Case study methodology typically allows personal involvement on the part of the researcher in seeking to learn about a particular group, such as this class of Grade 11 students. My own interest and background in the sport of orienteering dictated the situation to the extent that I was the most logical person to teach the unit. It was my resolve to provide a meaningful eleven lesson unit with plenty of outdoor navigational activity in a forest adjoining the school. As a teacher I could design the sequence of learning experiences to best meet the immediate needs of the students. I could change activities when the necessity arose to improve the experiential learning situation and to better provide a greater depth of navigational understanding. Insightful comments from the students further assisted the process and were helpful in ongoing planning of the unit.

From my initial entry into the school setting I began to take field notes. My approach was straightforward as I endeavoured to describe in detail the circumstances of my visit, what transpired during the time spent in the school and my reactions to the total scenario. I also

included personal comments regarding the progress of the study and my developing relationship with the students. These field notes were written on a regular basis immediately after each school visit so that both factual information and reflective comments would not be lost. Diesing (1983) advised this methodology rather than note taking during class activity.

The theme of "self-as-instrument" was reinforced by my consistent interaction with the students as a participant observer. The written documentation through field notes and, later, the students' written descriptions provided a sense of my presence within the study context. Furthermore, I orchestrated spontaneous dialogue with the students from the outset of my time in the school. The students openly shared their reactions and feelings as a sense of trust and respect developed over the months. It was important for each of us to share honestly what we had experienced during the orienteering unit. On reading the transcripts later I was delighted with the personal way in which they had shared themselves with me. During the unit as they reported their experiences to me an enlightening picture of what it meant to orienteer from their different perspectives developed.

All twelve taped interviews were transcribed and read many times. This process yielded a number of categories, the ordering of certain experiences, a number of reflections consistent amongst all students, and others that were unique to specific individuals. From a list of over fifty items, certain groupings suggested themselves and from these, six main themes emerged as most representative of the orienteering experiences of these students. These six themes were identified as follows: navigation; physicality; awareness of self-individuality;

competition within participation; relationship of time and space; and environmental awareness.

To summarize, three data gathering methods were used in this case study. The integration of participant observation of the students, written documentation by the students and reported dialogue of interviews with the students provided the data which was the subject of text interpretation.

Case Study

In this school based research the case was the study of orienteering as experienced by novice participants. Walker (1980) provided a definition for case study research as being an "examination of an instance in action" (p. 33). Best (1977) suggested that the process is personalized, while Wiseman and Aron (1970) stated that the case study is a social research method for gaining insight. However, Yim (1986) presents a more technical meaning as follows,

> A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. (p. 23)

It is interesting to note that case study researchers who write about their work are cognizant of the problematic nature of case study research and readily reveal their methodological concerns, by stressing there is indeed a specific structure that should be adhered to by researchers.

The context of my study aligned itself within the traditional parameters of case study research (Yim, 1986). The study posed a research question "What is it like to orienteer as a novice?" to Grade 11 students. The accompanying sub-questions supported the intent of the study to reveal a deeper understanding of how students reacted in an

outdoor learning environment through physical activity and how teachers could contribute in a more meaningful way to this educational process.

A commitment to a lengthy period of time is inherent in case study research, not because the field work takes so long to conduct, but rather to allow a mutual trust to be established between the students and the researcher (Walker, 1980). The final contextual component was the presence of the researcher in the outdoor-oriented physical education program of the students, wherein active participation as a teacher became significant in attempting to understand these young people in the context of their physical activity. In each setting, there were unwritten rules and an anticipated code of behaviour which were mutually respected and generally adhered to by all participants. Sensitivity to this context enhanced acceptance of the researcher.

The case study strategies implemented in this research were crucial to ongoing collection of data that spanned a six month time period spent in the school. MacDonald, et al. (1982) stated that "one characteristic of case study is the flexibility of its operation" (p. 260). My data came from several sources. First, documentation was gathered in the form of student writing assignments, journals and in-class questioning. Interviews and ongoing dialogue were the second means of collecting data. Finally, the researcher's field notes, written responses to the study question from experienced/elite orienteers, personalized introductory statements by authors of instructional texts and an extensive review of orienteering literature proved to be a cogent secondary source of data. In each instance, it was important to appreciate that recognized skills of a researcher are equally applicable in the implementation of case study methodology as any other style of research. These required research skills were identified as ability to ask good questions,

to be a good listener, to be adaptive and flexible, to have a firm grasp on the issues being studied and to be unbiased by preconceived notions (Yim, 1986).

After the initial observational phase of the study, the researcher assumed the role of the orienteering teacher. The duration of the eleven lesson instructional unit was six weeks. In the initial session, the sport of orienteering was visually introduced by means of a film and discussion. The successive lessons were predominantly held outdoors on the school campus and in the University Endowment Lands (UEL) adjacent to the school, with the final orienteering event in a forested park unknown to the students. Having extensive experience as an orienteer and teacher, the researcher combined an understanding of how and why each activity should be experienced by novice participants. Thus, from the research perspective, flexibility as to sequencing of the instructional components of the unit proved to be invaluable in providing a logical and responsive learning experience that truly reflected the needs of the students.

The collection of data, as previously identified, culminated with interviews, a methodology which is recognized as one of the most important sources of information in case study research (Yim, 1986). The interviews of the students were held on two occasions. Six sessions, each with a pair of students and the researcher occurred shortly after the successful completion of the orienteering unit and then again approximately three months later. In case study research, interviews may take several forms. However, the most commonly used approach is the "open-ended" interview, whereby the researcher may ask about more personal opinion and insights about events. A conversational style of interview was adopted as the students were asked to share their

experience of orienteering. The follow-up interview in the Fall reflected the same approach, when the previous transcripts and the competition map of Lighthouse Park were available to assist in focusing the dialogue between students and researcher. These discussions assisted in the clarification of several significant points from the students' experience.

In all research, it is particularly important to recognize the preparation required before initiating the study. This planning includes identification of skills and training of the researcher in conjunction with development of protocol and execution of the study with particular reference to the methods used to collect the data (Yim, 1986). Sensitivity to the particular context is of paramount importance in order to gain a time response to the study question. There are fundamental principles that assist in establishing validity and reliability of a case study (Diesing, 1983). One of these is use of multiple sources of evidence. In this study the predominant focus was the students and the reflective descriptions of their orienteering experience. However, personal supporting evidence came from other experienced orienteers (including the researcher's field notes), from instructional texts and the literature review. This latter source represents the second principle of creating a study data base. Each case study researcher must have a versatile methodology, however there are always specific guidelines to be adhered to in order to assure quality control (Yim, 1986).

Text interpretation in this study was organized through a thematic analysis, wherein six themes emerged as being representative of the students' experience of orienteering. There is a particular need in case study research for such organization to be representative of the

researcher's rigorous thinking and to be the most appropriate presentation of data after careful consideration of alternative structures (Yim, 1986). The reflective descriptions of the students as they revealed the nuances of an orienteering experience emerged as a thought provoking and shared endeavour, to the extent that as an orienteer, the researcher understood the nature of each encounter as it was told by each student.

In all forms of research it is important to maintain confidentiality of the participants. In this study a pseudonym was given to each student whereby the first initial of his/her own name was retained in the name assigned to them in the text. Walker (1980) stated that confidentiality is not simply a mechanical procedure, but a matter of continuous methodological concern closely related to the values of the research study itself.

Case study methodology takes many different forms but the acknowledged means of presenting the research findings is in a written report. It is important to recognize that the eventual audience to which the case study is directed will be free to interpret the data. Therefore, it is necessary that the study be supported by competent methodological practices and a sound theoretical base. Walker (1980) supported the value of case studies because they are totalities, a systematic and holistic type of research. He further stated that case study research has a quality of "undeniability" meaning "that someone is actually doing something; it is not hypothetical" (p. 41). Three further values that he identified are first, that a case study looks at a cluster of elements recognized as a particular quality in that the concreteness, vividness and detail of the phenomenon were explored, second, that the case study can be individualized and finally, that a

case study can accent process and change over time. Walker (1980) concluded by stating that case studies can be seen as close to the real world. Yim (1986) identified generalization as being one of the main problem areas in case study research; however, it is interesting to note the following observation by Merriam (1985) who stated that "the case study with its strengths and limitations becomes as viable a method of research as any other strategy." (p. 213)

Reliability and validity are recognized concerns in case study research. Walker (1980) stated that the critical point in reliability is that relationship between events and subsequent interpretation is seldom challenged, because the audience is generally unable to experience a similar occurrence. Walker also cited another difficulty in educational research, the problem of replicability, and suggests that where procedures are explicit, then replication should be possible. Validity is concerned with truth conditions and case study research relies on face validity, whereby results seem to fit the reality. As a concluding comment, Walker (1980) reflected that "most educational research simply does not directly connect with the world it purports to study" (p. 46) and that case study research may provide a viable alternative to current methodologies in educational research.

Yim (1986) endorsed this concept by suggesting five general characteristics of exemplary case study. It must be significant, be complete, have considered alternative perspectives, display sufficient evidence and be composed in an engaging manner. All these elements provide an exciting challenge to the case study researcher.

Thematic Analysis

The next six chapters provide descriptive text from the students through personal reflections from their orienteering experiences

during an eleven lesson unit in the spring of 1984. Written documentation and transcribed responses to interview questions were gathered and the data were grouped under fifty sub-headings. These were subsequently arranged under six main themes: navigation; physicality; awareness of self-individuality; competition within participation; relationship of time and space and environmental awareness. The intent of this thematic analysis was to illuminate the meaning of orienteering as experienced by novice participants in response to the study question.

Meeting the Students:

Originally, I interviewed 12 of the 24 students in the Grade 11 class I used for this study, however, one girl changed schools in the Fall and was not interviewed on the second occasion. To facilitate the task of introducing each student to the readers of this text, I asked the five remaining girls and six boys to complete a biographical data sheet about themselves. On the basis of this shared information I introduce each of the students. It is hoped that these individualized word pictures will provide a more personal context in which to understand the responses of each student.

> Barry is of medium height and build. He attends school because he has to and finds it generally useful. Barry's reaction to the outdoors is that "it is there." However, he suggested that the orienteering unit has helped him to develop a positive and better informed opinion of natural areas. He feels himself to be a self reliant and intelligent individual.
>
> Bruce is a tall, lanky fellow who is not athletically inclined. His favourite physical activity is billiards and he dislikes running. He only "enjoys the outdoors as a nice place to look at through a window." Bruce suggests that his academic abilities are more important than his physical self but he tries hard to maintain a balance between the two. He gives the appearance of being calm in diversity, particularly when out of doors.

Carlos is an athlete who enjoys playing soccer. He loves music and plays the guitar. Carlos suggests that he is surviving school and wishes that he did not have to attend. He enjoys the outdoors and finds the change in surroundings fun and inventive. Carlos is a people oriented individual and having friends is important to him.

Caroline is short and slender with sparkling brown eyes. She speaks Cantonese and has lived in Hong Kong. She is an articulate and intelligent girl who expresses herself well. She enjoys music and plays the piano very well. Caroline suggests that she has never really liked school; however, she loves being outdoors because "I don't feel cooped up and it is where I can relax." She has an independent nature and gives the impression that she knows what she wants out of life.

Christine is slim, with light brown curly hair and outstanding blue eyes (her comment). She enjoys winter sports and appreciates honest and real people who make her happy. Christine "loves the smell of nature and being free to explore and discover". She considers that her biggest success in life is living and surviving, as she is feeling the pressures of her studies at school and yet she knows that she will be proud of her achievements this year.

Cynthia is tall and of medium build. She is a sensitive individual with a look of remoteness in an otherwise cheerful personality. Cynthia has a flair for words and is able to express a poetic meaning in her writing. She is highly intelligent and a hard worker. She likes to dance when there is time. Cynthia loves the outdoors and appreciates individual activities. She feels good about herself, is a caring person and well liked by others.

Elizabeth is tall and likes sporty casual clothes. She is an active girl who enjoys team games. She loves being outdoors especially on sunny days. Generally, Elizabeth enjoys and does well at school. However, she is more interested in music, friends and travelling. She has ambitions to learn to fly when she leaves school.

John has a tall and athletic appearance that reflects a high level of physical skill, particularly in soccer - a game in which he excels. John has a positive attitude towards school, he is intelligent and does well in his

studies. A natural vitality allows him to enjoy life and demonstrate his leadership skills. John knows who he is and at the same time he cares for others.

Oliver is Greek speaking and his physical appearance suggests strength. He enjoys most sports and his hobby is reading. Oliver is an individualist and a person of contrasts. He enjoys his friends and at the same time appreciates his own company. He likes school because it is fun to learn. He abhors laziness and wasting time. He appreciates the outdoors and finds the experience an "exciting outlet for energy". He enjoyed orienteering because it is physical activity coupled with mental challenge.

Peter has a slender build and neat appearance. He enjoys a variety of sports, his friends and reading. He appreciates school as the only way to achieve his goals. Peter thinks the outdoors is great and the best place to be except when it is raining! Peter feels that it is important to like himself and suggests that he is an intelligent individual who sets high standards. "I think it's important to succeed in life because there is only one chance and I do not want to blow it."

Sally is of average height and build. She is an active person; she enjoys artistic endeavours such as drawing and painting and another hobby is reading. School is generally enjoyed except for oral presentations. Sally enjoys the outdoors, but does not like running. She feels that she is a resilient person who knows that all things are possible with effort on her part.

Summary

In the context of this case study, the sport of orienteering as experienced by novice participants was chosen as the focal point of the research enterprise. More specifically, the question asked was "What is it like to orienteer as a novice?"

This case study articulated the human phenomenon of orienteering by implementation of a triangular research design that has integrated the

methodology, the study context and the sport of orienteering to facilitate a holistic understanding of the study question as seen through the eyes of sixteen year old novice participants. To truly understand the sport of orienteering from the students' perspective, it was necessary to have them first physically experience orienteering and then reflect on their encounter in words.

CHAPTER 4: NAVIGATION

> Powers of relationship that come into being, to reach down, to reach out, to reach up... give reason to search for one's own personal extensions.
> (Ellis Price, 1983, p. 17)

Navigation is an act of getting from place to place, but more specifically, it is a method of determining position, course and distance travelled (Webster's, 1980). To transcend this fundamental dictionary definition is to initiate an involvement towards an understanding of what it means to navigate. Navigation, in the context of orienteering allows an innate mobility and urge to discover to be integrated into a concrete experience of a "travelling search" process.

Navigational Skills:

In the navigational instruction provided the students during their orienteering unit, a greater emphasis was placed upon the acquisition of map reading skills, rather than work with the compass and consequently, less reference was directed towards the compass in their reflective descriptions. In orienteering, navigational skills incorporate the use of map and compass. These two items represent the basic equipment utilized in this sport. Both play an important role in devising appropriate solutions to navigational problems that are encountered at all stages of learning during orienteering activity. In simple terms, a map is a picture of the ground and a compass provides direction and as

such they are the navigational tools of orienteering introduced to novice participants.

A map is a picture of the ground

The acquisition of map reading skills implies a fundamental understanding of a map and its dynamic relationship with the orienteer in a travelling search. During the initial instruction it is imperative the novice participant learn that an orienteering map is more than the intriguing arrangement of colours, lines and shapes that a casual glance may suggest. Albeit, map characteristics are contours, legend, scale and magnetic north that reveal a picture of the ground in diagramatic form. In this way, a map presents a three dimensional view of our immediate surroundings. A map is a book with its own unique language, which if correctly understood, can provide a wealth of information (Bengtsson & Atkinson, 1977). It is only when one is able to interpret the map "picture" that one can begin to effectively implement navigational skills.

Cynthia expressed her understanding of a map,

> What is a map? It's being able to relate something on a piece of paper to something that is very real.

With these words, a basic definition is being expressed in order to initiate comprehension of what a map is in the context of way finding. Cynthia continued by saying,

> You're trying to get as much out of the map as you can...it's almost like, that is, where all your clues are and you try to pick out as many as you can, to then use them.

The map is not a passive document but rather, if used well, it becomes an important dynamic in seeking greater depth of understanding in map interpretation. Through this struggle are the beginnings of

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UNFORTUNATELY THE COLOURED ILLUSTRATIONS OF THIS THESIS CAN ONLY YIELD DIFFERENT TONES OF GREY.

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LIGHTHOUSE PARK

orienteering/ recreation map

contour interval 5 metres
scale 1:5000

magnetic north

scale 1:5000

0 METRES 250

...field Cove

legend

- NARROW
- PARKING
- LARGE TRAIL
- SMALL TRAIL
- INDISTINCT TRAIL
- FENCE
- BUILDING
- PICNIC TABLE
- BENCHES
- OUTDOOR THEATRE SCREEN
- FIELD GRAVE
- OTHER MAN-MADE FEATURE
- PERMANENTLY OUT OF BOUNDS
- POND
- MARSH
- SEASONAL STREAM
- CONTOUR
- SLOPE LINE
- FORM LINE
- KNOLL: SMALL, LARGE
- DEPRESSION
- PIT
- CLIFF: SMALL, LARGE
- BOULDER: SMALL, LARGE
- BOULDER FIELD
- OPEN LAND
- SEMI-OPEN LAND
- FOREST
- VERY THICK FOREST
- INDISTINCT VEGETATION CHANGE
- DISTINCT VEGETATION BOUNDARY

Be Careful with Fire in the Forest

FIELDWORK: PONTUS ERIKSS...
JORGEN GUSTAFSS...
MAGNUS OREDSSON

DRAWING: ROSS BURNETT©ON 1985

BASE MAP: ACKERFELDT PHOTOGRAMMETRY L... ...kinson

...NG IS A RECREATIONAL ACTIVITY THAT ...OLVES NAVIGATION THROUGH UNFAMILIAR TERRAIN USING A MAP AND A COMPASS. THIS MAP IS ONE OF MANY THAT THE ORIENTEERING ASSOCIATION OF B.C. PRODUCES AND USES TO STAGE REGULAR EVENTS THROUGHOUT THE PROVINCE. PARTICIPANTS IN THESE EVENTS ARE INVITED TO ORIENTEER THEIR WAY FROM ONE CONTROL POINT TO THE NEXT, ROUND A PRE-SET COURSE BY RUNNING, JOGGING, OR WALKING. AT EACH ...VENT A SELECTION OF COURSES (BASED ON LENGTH ...D DIFFICULTY) IS OFFERED. MORE INFORMATION ...UT THIS GROWING SPORT MAY BE OBTAINED FROM:

OABC, SUITE 100, 1200 HORNBY STREET,
VANCOUVER, B.C. V6Z 2E2

...ORIENTEERING ASSOCIATION OF B.C. GRATEFULLY ...NOWLEDGES THE FINANCIAL ASSISTANCE OF FITNESS ...NADA AND THE PHYSICAL FITNESS AND AMATEUR SPORTS FUND, MINISTRY OF PROVINCIAL SECRETARY AND GOVERNMENT SERVICES, PROVINCE OF BRITISH COLUMBIA.

POINT ATKINSON WAS FIRST CHARTED AND NAMED BY CAPTAIN GEORGE VANCOUVER IN 1792. THE FIRST LIGHTHOUSE WAS BUILT IN 1875 AND IN 1881 THE LAND WAS SET ASIDE AS A LIGHTHOUSE RESERVE. TODAY THE 75 HECTARE PARK IS ADMINISTERED BY WEST VANCOUVER PARKS AND RECREATION.

maintaining a balance between the novice participant, map and terrain. In an orienteering relationship between the students and their immediate surroundings, a map is more than a mere sheet of paper portraying multi-coloured configurations and pattern of intricate design which may be attractive to the eye, yet may not convey any meaning. The map theoretically assumes a three dimensional representation serving to reflect the reality of the environment. It is imperative that this vital link be established to allow for successful navigation through any unknown topography. The word "topography" comes from the Greek "topographein", meaning to describe a place. To elaborate further, "topos" means place and "graphein" to write, thus a better understanding of the map function is provided (Webster's, 1980). An orienteering map becomes a dynamic reality of the topographic landscape that surrounds the orienteer.

Orienteering is about maps (Palmer, 1976). It is an ability to internalize one source of information before processing and transmitting that same data into another form. In this way, map symbols become pictures which more closely relate to the reality of natural features within our landscape. Without a map, an orienteering endeavour would lose much of its purpose as the students would not be able to truly navigate through an unknown outdoor setting. The map is vital to any navigational enterprise as Cynthia suggested,

> The map is important because you need to know where you are going, because without it you couldn't really do anything, you would just wander about.

John is not as confident in his relationship with a map, "the map told me where the trails were, but didn't tell me what they were like." He experienced some initial difficulty in finding a meaningful

association with his map,

> The map teaches you to have confidence in yourself, that you know what you're doing. Map reading skills teach you how to use a map.

Map reading skills constitute a form of literacy and like all literacy it empowers the reader to gain a certain autonomy. Hence, John can speak of a certain "confidence." How can a map teach confidence? "Without a map it's very difficult to know which way to go and what is surrounding you," said Edith. One gains confidence because where one otherwise would feel lost, without any bearing, now one has a sense of direction, an orientation.

Ernie offered a powerful statement, as he described his unique relationship with his map, in the following way, "You could say one experiences the map." This suggested heightened awareness of "self-map" relationship. To experience a map is to be in dialogue; the map and the orienteer "speaking" together in an exchange of information: a particular feature is seen in reality and it is located on the map. At this moment the map ceases to be a sheet of paper; it becomes a diagramatic picture of the ground to the novice participant.

Elizabeth recalled,

> I thought by just looking at the map it was easy to understand, but when it is actually related to an actual outdoor environment, it didn't make much sense at first.

Her remarks revealed some frustration during the transitional process, in learning to understand the dynamic relationship that is required between an orienteer and a map. Sometimes it is the reality of one's surroundings that permits heightened awareness to the functioning of a map as theoretical learning is transformed into practical experience. The map becomes more authentic as a true reflection of reality in an

actual outdoor setting. Elizabeth suggested that map-terrain relationship appears to be easily understood, whereas in the reality of an outdoor setting, the concept is not so readily comprehensible; this can result in some difficulty during the early stages of orienteering. To truly experience navigational knowledge and to acquire some understanding of its application, a novice orienteer must apply these theoretical principles in a practical situation. He/she must experience an unknown landscape during an orienteering event.

Christine shared some practical clues relating to her newly acquired map reading skills,

> To be able to read a map and its legend is important, so that you will be able to identify your position, the environment around you and which will be the most effective way to get to your destination.

In this statement, Christine carefully described the functioning of her map, with reference to her present locality and available options to initiate her direction of travel. Her description revealed a grounding in reality. She has not recognized the emotional interaction with a map that may occur during any orienteering experience. Sally portrayed a more personal impression within her experience when she said,

> I found it difficult at first to understand how to navigate myself in the forest with just a map. I didn't understand the concept of orienting myself to the map, and turning, so that the trail and the trail marked on the map went in the same direction.

The concept of "being oriented" is difficult to grasp initially, but comes about through the act of being in an outdoor setting, with a map in hand and turning to establish a conscious connection between the orienteer, the map picture and visual images of his/her immediate

surroundings. As confidence is gained in navigational judgement, a true orienteer-map dialogue begins to be established.

Janet shared from her navigational experiences,

> It is learning to be aware and sensitive to your surroundings so that you can follow the map efficiently and find the control flags.

In this way, Janet was saying that awareness to her surroundings in conjunction with efficient use of a map will ultimately contribute to the rapport between herself and her immediate environment. The map can be understood as a pictorial representation of the ground, resulting in successful location of control flags so the main objective in orienteering is achieved, namely, course completion.

The following comment from Oliver reflected a personal confidence in his own map reading ability,

> I looked at the map and there were so many things [features] that it's just too hard to get lost with all these points of reference. You just look at your surroundings...you see a big cliff and you know approximately where you are or you see a path or a couple of boulders in a certain place and even land contours can be helpful sometimes.

It is evident from his description that Oliver had made that vital connection between his surroundings and the map. He was able to describe details of natural features that had been encountered in Lighthouse Park. He showed disdain at the thought that anyone could get lost when provided with so much environmental information, either from a map or through visual interaction with the immediate surroundings. An ability to read "land contours" effectively is a fundamental navigational technique that requires both practice and an instantaneous interpretation in relating map to ground when travelling at speed during a competition event. Most novice orienteers experience real difficulty in this dimension of map

reading. It was remarkable that Oliver had little difficulty in utilizing this particular technique in his orienteering experience.

Caroline suggested that orienteers have to be quite precise in their map interpretation, when she shared this comment,

> I think when I was reading the map I was trying to be specific...where the circle was is where the control [flag] would be, that is what I thought, but it wasn't quite what I had expected. I think it was off to one side of the trail and I thought it would be right in front of my face.

As a novice orienteer, Caroline was beginning to learn that orienteering is not a treasure hunt, whereby one is merely asked to locate a particular sequence of control flags. Instead, it is the intention of the course-setter that participants discover each natural feature before locating the control flag. Thus, the placement of the flag is of great importance so that it is not too obvious or hidden in some obscure place. One has to read maps with a degree of intelligence in order to have developing navigational skills constantly challenged. Caroline continued with another description that portrayed her interaction with the map,

> On the map it was very clear which trail you had to take, but when you were in that area, there was a little tiny trail which was not really significant, so you're tempted to take the path that was in front of you instead of turning off.

Caroline suggested that it is not only a matter of establishing a duality between a map and surroundings, but that this conscious connection is followed by a navigational decision. This particular process is repeated constantly throughout one's orienteering participation.

Peter endorsed the value of careful map reading by saying,

> You can anticipate the type of terrain by reading the map and looking at the legend... seeing where you are and what kind of terrain is around you...if you know where you are, then you know where to go to next. If you don't know

> where you are on the map, it's really hard to go anywhere, you just sort of stumble around.

With this passage, Peter essentially provided a definitive statement that revealed an essential quality of map reading, when he exclaimed, "if you don't know where you are on the map, it's really hard to go anywhere." This notion is vital to a successful navigational experience. In a later discussion, Peter revealed his doubts about his map reading ability and in so doing, he expressed a concern common to all novice orienteers when he wondered whether this highly colourful sheet of paper will ever mean more than an intricate pattern of lines and shapes. However, as Peter was to discover, the map does disclose its secrets and provides a more vivid picture of the ground as one's orienteering experience grows. The map truly becomes a living document that is part of a dynamic encounter with an outdoor environment.

Compass gives direction

A compass is the other navigational aid but it is of secondary importance to the map. Webster's (1980:227) defines a compass as "a device for determining directions by means of a magnetic needle ... turning freely on a pivot and pointing to the magnetic north." It is interesting to note that the origin and development of the compass as a functional tool for travelling is comparatively uncertain. The function of a compass is to provide direction of travel. As the sport of orienteering developed into a competitive activity, the necessity of having a compass that was simple and efficient to use became very evident. Thus, the first protractor type compass was designed by the Kjellstrom brothers during the 1930's (Andresen, 1977; Disley, 1978; Smith, 1982). This new compass had a liquid filled capsule that was attached to a clear plastic baseplate, which allowed the magnetic needle

to settle quickly to indicate north, rather than "spinning about" as was common with earlier models. This innovative compass was called the Silva compass and subsequently, it has become part of the navigational equipment used by many orienteers.

A question is posed. If presented with a choice to use either an orienteering map of an area or a compass, when located in an unknown outdoor environment, which would an orienteer select in order to successfully navigate himself/herself into a familiar setting? Invariably, preference would be given to the map. A sound decision because the map, if correctly oriented and aligned to magnetic north, can provide both direction of travel and reveal an accurate diagramatic picture of the immediate surroundings through which one is about to travel. This response represents the relative importance of a map in comparison to a compass within the context of orienteering. It is possible to effectively navigate without a compass while making use of a map. It would be more difficult to find a route through an unknown environment with a compass alone because of the uncertain knowledge about the landscape through which one would pass, even though a direct compass bearing could be followed. However, it is the skillful use of both map and compass that allows for efficient and effective navigation while orienteering.

A ten lesson instructional unit prior to their cross-country orienteering event at Lighthouse Park was a comparatively short period of time for the students in this study to develop competent mastery of the compass. Consequently, as is true with most novice groups, compass instruction was secondary to effective development of map reading skills.

Unknown Environment

The spirit of orienteering summons each orienteer towards an intellectual challenge and physical confrontation with an unknown outdoor environment in which newly acquired navigational skills are experienced and tested in a meaningful way. In an essentially unknown setting these novice orienteers were surprised to find themselves responding to navigational challenges. Orienteering demands an ability to apply previous experience in response to a current situation even though past endeavours may only be applied in general terms to the current position, as each navigational situation is unique. Smith (1982) implies that even if an orienteer returned to the same area on a second occasion, he/she could never run the same course in an identical way as on the previous occasion. However, as orienteers travel through an unknown landscape, they are able to recall similar experiences and make use of past navigational expertise appropriately in the current situation.

Two of the girls (as novice participants without previous navigational encounters) shared their feelings about the strangeness of being confronted with an unknown environment. Elizabeth described the experience this way,

> For me, it was more sort of a mystery. When you were in the Endowment Lands, you knew, that no matter where you were, you knew what was on all sides of you. Now, when we got to Lighoutse Park, we had the ocean and were told of other boundaries, such as the road. But we were running around the outside of the park, all that area around you in the middle was a mystery...what you were going to come up to next and where you were going to turn, if you follow the map. For me, it was definitely a sense of not knowing what was going to come next.

Elizabeth suggested through this description that the impact of an unknown environment has several dimensions. Firstly, she drew a comparison between the known and unknown, by her reference to knowing

what was on all sides of her, as in her experience at the University Endowment Lands (UEL). However, Elizabeth appeared to need more reassurance than the knowledge of the boundaries as represented by ocean and road in Lighthouse Park as she still expressed uncertainty about the area situated in the centre of the park that would remain unvisited by her. This territory was totally mystifying in her experience and based upon her novice level of navigational expertise was encountered as a sense of not knowing. However, there is no indication of being afraid, only a revelation that one is unable to be cognizant of all components of an orienteering event, until one has personally experienced the forested setting. In so doing, the elements of an unknown setting have become a known environment.

Sally endeavoured to describe an outcome of her encounter with an unknown landscape by saying,

> Notions of how the course was going to be interfered a lot at the beginning, but when you really got the feeling for the course after the first few controls, this can make or break your entire experience.

Sally shared her uncertainty about the course as she compared her experience to a "break or make" situation. Thus, indirectly she was suggesting that this unpredictability was very much a part of an orienteering enterprise. Not all components of an event may be known prior to one's participation, thus it is the challenge of the unknown environment that is vital to the total orienteering experience.

Knowledge of Self

An unknown setting may generate feelings of apprehension, particularly at the novice level of experience, and yet at the same time may instill the excitement of a challenge that allows a level of understanding of oneself to be consciously experienced for the first

time. Thus, during orienteering endeavours an opportunity is provided to become more in tune with one's inner self in response to situations not previously encountered.

Oliver was the only individual who elected to generally ignore the trails and whose preference was to negotiate a cross-country route through the forest. He found that trail running did not provide sufficient navigational excitement,

> To find these [control] points you have to use a map and compass, but I didn't bring one with me, to guide me through the forest or wherever you were going. I ran through things and didn't let them stop me. The map helps you find out where you are, which way you are facing and then, you go the way you want. You try to go in a straight line and you usually do pretty well. I crossed the parking lot to the other side of the road, to climb into the "bush" and cut through which was actually faster. It was alright, I mean, it wasn't that hard, well, it was uphill and it wasn't that thick...it was pretty thick. I went down, right down to the main trail and I came across the control so I guess I got lucky 'cause I hit it right on!

Oliver required a navigational challenge. Although the course difficulty was appropriate to the level of student orienteering experience, he knew himself sufficiently well to realize that he did not want to trail run like the others because "that was boring." Thus, Oliver made a personal decision to take a more direct route between control flags. He was successful, despite his lack of navigational expertise, as he realized in a physical way a little of his innate tenacious personality.

Oliver understood the purpose of the event and he knew what equipment was required to assist in a successful navigational endeavour. He did not use a compass, even though he attempted to follow a straight route through the forest. His description reveals that he underestimated the density of the bush and betrays a sense of relief in locating all the controls required to complete this orienteering event. However, Oliver

did use a map to orient himself and determine his direction of travel, before attempting his own cross-country trek (route) through the forest.

An ability to make sound navigational judgments under pressure from prevailing competitive conditions of an orienteering event is to draw on experience and learn to accept the consequences of actions. Knowledge of self is vital to ultimate navigational success. It has been suggested that to be successful in orienteering the mind should be trained to record like a camera (Palmer, 1976) whereby an ability to memorize and check off features by observing the shape of the passing landscape and matching it to the map is imperative to the navigational success. Thus, it is quality of information assimilated that is vital to passage through an unknown environment.

Orienteering is a stimulating activity which utilizes both mind and body as a partnership in response to a sequence of navigational challenges. Oliver was not a fast runner, so he used his mental capacity to solve the navigational problems that this course provided the participants. His description suggested that he was aware of his immediate surroundings and his observational powers allowed him to keep on course by careful use of his map. Thus, Oliver was able to respond effectively to the call of an unknown setting in his own unique way and at the same time satisfy a need to experience his own challenge of endeavouring to solve this navigational problem.

Cynthia shared her understanding and knowledge of herself within the context of her orienteering experience,

> It was a good feeling to be out there relying entirely on myself and my abilities. It was a chance to use everything I knew, noticed or could figure out and apply to my situation, not knowing exactly where I was or where I needed to go, but seeing it on a map and using that to try and find my way. It was also very satisfying and rewarding when I accomplished

> what I had set out to do. In orienteering I had the outdoors, a map and myself. I went through the problem myself, with me as part of it. I knew I was right, because I had learned the skills and completed my course.

Cynthia vividly described her intimate involvement in the total orienteering experience. It is evident that Cynthia felt confident about her newly acquired navigational ability and expressed her pleasure at being "out there". She accepted the challenge of applying herself and her newly-found knowledge to the endeavour of way-finding through an unknown environment. She was rewarded by achieving her objective through successful completion of the course. Cynthia aptly provided a concise definitional statement to describe her understanding of the essence of orienteering, as she said, "I had the outdoors, a map and myself." With these words, it is suggested that she is aware of the triadic relationship of self, map and landscape which is the ongoing dynamic of this activity. Cynthia does not negate her own specific involvement within the context of a sequence of navigational problems, as she expressed a sense of her integral role in the total experience with the following words, "I went through the problem myself, with me as part of it." Thus, she described a mutual interaction between all components of a navigational challenge which in essence is orienteering participation. However, Cynthia at the same time, was made aware of her own independence, as she described her response to navigational decisions in relation to understanding of the map, awareness of her surroundings and knowledge of herself. Cynthia was at the centre of her orienteering encounter.

This concept was endorsed by Edith as she shared the following comment, "I enjoy jogging, the outdoors and doing things independently." Here, Edith reflected a similar awareness to the diversity of an outdoor

pursuit, such as orienteering, that inspires individuals to participate at their personal level of involvement in relation to unique navigational experiences.

Andresen (1977) shared the significance of orienteering as a total experience of self in the following quotation by Kjellstrom,

> Orienteering, in the fullest sense of the term, is a program... The basic principle of this program is learning through participation...participants gain confidence in their own ability and skills, and develop proficiency and experience in fending for themselves in the woods. And by so doing, they unconsciously assimilate a favourable attitude towards outdoor life of all kinds, making good habits valuable to everyone throughout life. (p.10)

Orienteering as an outdoor activity demands from each individual, particularly at the novice level of participation, some conscious knowledge of self so that potential navigational skills are realized.

Mind and Body Duality

Novice participants are generally surprised to learn that orienteering is frequently labeled as the "thinking sport." This merely implies that before any physical action is undertaken some intellectual stimulation must first occur. It is mental ability that initiates the process whereby thinking through a navigational problem culminates in a decision being taken. In orienteering the students' physical selves responded to a mental challenge, in accordance with their running ability and level of fitness. Thinking on one's feet may, in some measure, describe this process. Decisions appear to be made instantaneously resulting in immediate physical response as bodies are propelled cross-country through the forest towards the location of the next control flag. However, it is recognition of mental stimulation that must proceed any physical motion. There is a dynamic balance between mind and body as each navigational decision becomes a reality.

Although all students personally experienced this process, it was their physical response, as the outcome of mental activity, that they most often described. Their comments concerning their own mobility reflected an awareness of purposeful running within the context of an orienteering event. There seems to be a need for clearer understanding of the duality of mind and body that comes together during an orienteering experience.

John shared his thoughts on this issue as he said,

> You are running and you have a lot of things on your mind, like where I am and it doesn't register in your head to just stop and look around to get your bearings 'cause you are always running and trying to finish. So, it's easier to do it now, and say where you could have gone, rather than at the time.

John aptly described the dilemma of all novice orienteers when the pressure of a navigational situation is first encountered. An initial tendency is to keep running, reflecting the notion that everything will work out as anticipated. However, this spontaneous activity may not represent any thoughtful decision made in specific consultation with the map. John spoke from limited navigational experience. However, his advise of stopping momentarily to look at one's surroundings, to become truly oriented with the map, is a sensible approach. It is important to discover the purpose to the mobility of a traveling search. Bruce described his orienteering experience in this way,

> Orienteering is more enjoyable than just running, you have a goal to find something. I think it takes your mind off the tedium of just running.

Bruce suggested that he preferred the mental stimulation of navigational decision making while orienteering, rather than the anguish he normally experienced (he described it as the "pain of running") during the physical act of running. He obviously needed a distraction to endure his

"enforced" mobility.

Barry expressed a similar sentiment in this comment,

> to be actually orienteering was different from just running through the woods, because it meant that there was a purpose to what I was aware of doing.

Barry appeared to have become aware of the mental challenges provided during his orienteering experience that contribute a definite meaning to his participation. This recognition provided navigational justification to the physical activity of his travelling search. Barry provided elaboration when he said,

> You have to make a decision, you have to make firm decisions and know what you are thinking of, you have to have a clear mind...it's not just a body that is doing it, it's your mind as well.

The realization that orienteering demands use of both mind and body is clearly stated in Barry's words. It is the effective interaction between the two that results in development of competent navigational skills.

Sally endorsed this point of view as she said,

> I didn't mind running in orienteering nearly as much as just jogging. I detest having to run along with no purpose or intent.

Sally expressed her feelings relating to potential intellectual challenges imposed by a desire to solve navigational problems. This mental stimulation appeared to counter the apparent dullness of simple running. Jogging, as a physical activity, did not appear to be an enjoyable experience for Sally. The desire to have a purpose to her running was deemed to be important for her general enjoyment.

Cynthia reinforced the feelings of boredom in "just running" that were expressed by many students, by endeavouring to describe her running experiences in orienteering,

> I can remember a few times when I ran downhill, that was a good feeling. It sort of feels good to be jogging along in the woods, instead of just running.

Later she continued,

> I guess each control was a new beginning...now, I'm going to try and do this one all the faster and better...if you go through it carefully, I don't think you have anything to worry about.

Initially, Cynthia suggested that to be travelling on foot through an undulating forested landscape was a rewarding experience and felt good. The implication being that she was aware of her surroundings and not her physical self. Cynthia continued by suggesting that each leg (segment of the course) is essentially a new beginning. At the control location, there is union with both the map and immediate environment. To Cynthia, this connection provided the re-assurance she needed to continue towards successful course completion. She indicated that "going through it carefully" would allow for thoughtful route selection in order to reach her destination by solving each navigational problem.

Peter collaborated with the view shared by Coral, as he said,

> You are running through the woods all the time and you get a good feeling whenever you're running.

It does make a difference to a running experience, as to where a particular physical activity takes place. To encourage sensitivity towards their surroundings, in this instance a natural outdoor landscape, can be a truly memorable experience for the students. Careful observation of specific natural features located along a designated route does not negate the ability to be aware of the landscape's totality.

Christine shared positive thoughts about orienteering as a first time experience with these words,

> This was the first time I really liked running because I was running for a purpose. I was running for a goal.

It appears to be important to have a definite objective when running is involved in an activity. The intellectual challenge of route selection certainly provides this vital component within the context of orienteering. Christine continued by saying, "It's an internal fight within yourself to succeed." Thus, Christine brings to light the balance between mental stimulation and physical activity that is so vital in the completion an orienteering event.

Elizabeth offered the following comment,

> I was thinking of each control. I was wondering whether if this one was going to be difficult for me to find, or how I was going to decide on which route to take. But I wasn't thinking past the control I was heading for at the moment, so I was thinking in general terms. I was thinking directly of my next control...and making choices that are going to benefit the most.

In this description, Elizabeth portrayed the thought processes that she used during her travelling search. She appropriately divided her course up into small navigational packages and dealt with them one at a time. She used this fundamental approach of a novice orienteer sensibly. Later, when her map memory skills are better developed she may be able to pre-plan upcoming sections of her course while travelling to the next control location.

Carlos vividly described the compelling link between mental capacity and physical ability with the following words,

> I generally found it best to keep a steady pace, even though you passed other people. If you were not sure of a trail, just check it over again, look at your map and surroundings, then decide if it's the correct trail...get a fast start on it and run quickly along the trail.

Carlos is a competent runner, yet he felt it necessary to maintain a "steady pace" and to keep checking his map in order to be oriented with his immediate surroundings. Once assured of correct orientation, then he

could then use his physical ability to best advantage. This is a mature approach for a novice orienteer.

Caroline endorsed the concept that Carlos presented in his description by adding her reflections,

> I think you have to be calm and to think without having to worry. You shouldn't make yourself worried as you won't make the right choices.

Caroline suggested that calm intellectual powers are needed to make correct navigational choices. Caroline continued to elaborate,

> I think orienteering is as much mental involvement as the physical part of it. You can walk it and not physically strain yourself, but you still have to think.

With these words, Caroline has clearly stated her understanding of the importance of thinking before taking any action. Oliver summed up the mind and body duality when he commented,

> Orienteering helps to develop confidence in direction finding by just pacing yourself. I think that it was a worthwhile experience because it is one of those sports where you rely on yourself and I like the sports that you can do this...you keep going, you try to please yourself and do it basically by yourself.

This statement summarizes what orienteering can mean to individuals in light of personal differences. Each individual sets his/her pace but to be a successful navigator, it is necessary to develop an ability to make sound navigational decisions under time pressures demanded in the context of an orienteering competition. Thus, Oliver was aware of his own limitations within this particular activity and yet revealed the strength of his unique personality that added to the worthwhileness of his orienteering experience.

Environmental Observation

Powers of observation are important to novice orienteers as an integral dimension of navigation. Small features within immediate

surroundings must be carefully noted and cross-referenced with the map while constantly scrutinizing the landscape. This orientation process provides validity to a navigational endeavour and assists in consolidating the relationship of map and terrain. Interaction with the map is a constant factor of the orienteering enterprise. The eyes of an orienteer dialoguing with both terrain and map is a vital component of skillful navigation.

The students' level of awareness to the necessity of observational skills involved in orienteering was as diversified as the students themselves. However, as their navigational confidence increased, gradual recognition of the importance of environmental observation was realized by most. John shared a description which is typical of an individual who enjoys the vigorous mobility inherent in orienteering,

> When you're plodding along you're not noticing. As I was running up the hill, it was run, run, run and trying to get to the next trail. But when you start running downhill, I was going down fast, as fast as I could. I was watching the trail because I didn't want to trip...that would be the only environment I saw and it was very narrow to me.

This descriptive sequence by John suggested that as his level of physical exertion increased his range of vision narrowed. Hence, the fleeting impression of his immediate surroundings was minimized to the width of the trail. With more experienced orienteers physical and visual capabilities are better integrated and it is possible to visually scan an approaching horizon more efficiently as observational skills become more effectively matched to mobility.

Peter described his personal mobility across rugged terrain in this way,

> I'm very quick on the rocks and things like that. I've developed a habit of watching the ground and not anything around me. I just watch the rocks because

> if I see one I could slip on, I will try and change direction.

Peter suggested that his range of vision was definitely restricted so that he would avoid missing his footing while travelling over an uneven ground surface. No doubt, as he becomes more confident in his abilities, his interest in personal safety will diminish and he will travel at a faster rate.

Carlos enjoyed running. He appeared to be observant of his immediate surroundings and felt himself to be part of the outdoor setting,

> I seem to run faster in the woods because it's softer ground and you see all those trees...you can see them way down the trail and you are just there.

Carlos suggested that it was a different experience to run through a forested environment and his presence was part of the setting as he travelled down tree lined trails.

Christine expressed a similar feeling with her comment,

> The forest is much more interesting to look at and it's always so different. I mean it's all trees and everything. Orienteering is basically an outdoor activity and I guess that makes you aware of your surroundings. This is the first time that I probably really appreciated my environment because I've never been out on the trails for orienteering before I really enjoyed it and that's not just being influenced to like it, that was just personal.

Christine was somewhat surprised by her own reaction to this orienteering experience and the extent to which she was aware of the environment. She shared a personal reflection of her orienteering encounter and suggested that her reaction to this new activity was not influenced by others. It was her experience of the outdoors.

A description by Sally revealed her developing observational powers,

> I caught sight of the control flag just out of the corner of my eye. Everyone else was running by it when I got up to it. It was really a fluke that I saw it. I couldn't judge it was that steep. I was supposed to be looking for a steep cliff, but I was just looking at the side of the trail. I didn't realize I was supposed to be looking up and didn't get that it was way up. So I guess at that point I was looking for the feature, but in fact, I found it by finding the control flag!

It was interesting to note Sally's concern for the fact that she was endeavouring to locate the feature prior to finding each control flag. It had been stressed throughout the instructional phase of their unit that orienteering was not a "treasure hunt" game relating to spotting the orange and white control flags. As an environmentally based activity, navigational skill in orienteering is predominantly reliant upon a map interpretation and observational powers. Sally expressed her surprise in locating this control flag by a chance upward glance when others had missed it by focusing on their trail running. Her reflection revealed a lack of experience with her newly acquired map reading skills. Sally's inexperience was reflected in her inability to make a necessary relationship between map and terrain. This fact was not appreciated until she had spotted the control flag placed between two knolls at a distance of twenty five meters from the trail. This specific location was shown on her map by the contour lines that indicated elevation change. Sally was obviously sensitive to her surroundings and was constantly involved in a visual search of the features about her. From evidence provided by the map, she was cognizant of approaching a control location and her decision making ability was rewarded by keen powers of observation.

Oliver described how he consulted his map before interacting with his immediate surroundings,

> I looked at my map to see if there were any big rock faces. I liked the park because I didn't know the ocean would be so close and I spent time looking at the water as I travelled around the park.

Oliver effectively used his map to identify the position of specific features by which he could orient himself and so keep on course. His second comment suggested his appreciation of the uniqueness of this park location situated beside the ocean, a factor that did not go unnoticed and which may have contributed an added dimension to his orienteering experience that afternoon.

Elizabeth subscribed to this line of thinking as she said, "Orienteering gives me a mood of the outdoors, rather than being indoors." With this reflection, Elizabeth was suggesting that there was a special quality attached to her experiencing of the outdoors. Elizabeth shared what she noticed specifically about Lighthouse Park,

> When I was in the park, I liked the part most that was around the area by the bridge over the little stream and down towards the water and the rocks.

Cynthia spoke of her appreciation of trees as she said,

> I like evergreen trees and I know in the park that the forest was a little bit more dense in some place, but I do like big trees.

This comment suggested a particular liking for west coast rain forest and a definite indication of environmental observation. Cynthia was especially sensitive to the feelings generated by her experience of running through tall evergreen trees. This type of forest does make a powerful impact as the tree size and stability reflect a permanence. Cynthia summarized her thoughts with these words, "Orienteering has a different feeling and meaning for each person. It is your experience." This reflection can be credited to any activity in which each individual becomes totally involved. Furthermore, environmental observation

enhances physical participation in the outdoors and this is an unparalleled quality of an orienteering encounter in a natural setting.

Fear of Being Lost

Fear of being lost is a very real experience for novice orienteers whose navigational skills and decision making ability are comparatively untested. A first attempt at independent navigation in an unknown forested landscape may be an unnerving experience. It may be a time of personal apprehension and mounting fear regarding one's ability to find the way about a simple course set on a network of trails.

Cynthia vividly portrayed her understanding in the following descriptive passage,

> Getting lost is part of the sport. It seems frantic going out there and trying not to get lost, instead of just finding the controls because even while you are out there, in a way you are still lost. You are really in a way where you are, but it's just out there, so in a way you are already lost.

Cynthia graphically shared her experience of not wanting to become lost and yet at the same time, she realized that she may well be lost without recognizing that fact. Later, Cynthia endeavoured to provide additional clarification for her phrase "in a way you are already lost" by saying,

> This means that you don't really know where you are. You see it on the map, but it doesn't really mean anything to you. It was an unfamiliar place so you feel a little lost.

Essentially, Cynthia was attempting to say that in order to acknowledge being lost, it was necessary to experience a complete harmonization between herself, the map and her immediate surroundings. She suggested other "technical" factors that may result in experiencing being lost when she said,

> Getting lost is not being attentive and not really understanding where you are or what is around you or how to get back to where you want to be.

There is a need to have mastered a basic level of map interpretation in order to be constantly oriented. She concluded on a more philosophical note by saying,

> It really depends upon each individual and how they react to a particular situation or experience... I know that when I thought that I was lost I was a little anxious because I have a feeling of just not knowing exactly where I was or if I was just thinking "Where am I?

This is a situation that reveals a common experience to all orienteers. Fear of becoming lost may be as traumatic as the actual experiencing of the reality of being lost. This is magnified when it occurs in a previously unknown outdoor setting. Each uncertain step taken across unfamiliar terrain, even with an orienteering map in hand, can be a stressful experience. It is questionable reliance on the map and inability to relocate oneself that begins to undermine confidence in map reading skills. Nothing appears to be able to divert fear of being lost even before the moment of being lost is experienced.

However, initial fear of being lost reflected in uncertainty of an ability to complete the course is a feeling experienced by all orienteers, regardless of level of navigational expertise. An important dimension of orienteering activity is that initial fear of being lost, when overcome, is called experience. Each time the novice orienteer participates it provides a new beginning based upon past navigational experience; thus, the potential of being lost will become less problematic.

Berglund (1979) suggested to keep cool, and review things quietly if you think you are lost, whereas Kjellstrom (1969) provided more forceful advice with a "stop and think" dictum. Brown and Hunter (1980) recommend

the following maxim, "The good orienteer knows where he is, even when he's lost" (p.49). Features have been mentally checked off as they were passed so this environmental knowledge may be used to facilitate a return to a last known location. In this way, orienteers may get in touch with their map and become synchronized with their surroundings.

It is interesting to note that "fear of being lost" was a consistent theme in the writing of all students and their comments reflect a genuine concern on the part of each individual. This apparent negative dimension of their orienteering experience was well balanced by sharing many exciting descriptions of their encounters with map and compass in our Lighthouse Park event.

Carlos was forthright in his approach to a possibility of being lost by remarking, "I got lost, made some mistakes, but not bad... I'll do it again!" His comments suggested it was expected that some mistakes would be made and he would learn from them. Carlos went on to suggest,

> If you don't know exactly where you are, then you are going to be completely lost, until you get somewhere to where you can relate it to your map.

Although Carlos began with an emphatic statement, he did suggest a possible solution of taking necessary action to become re-oriented, as he shared one of his experiences,

> I got kind of lost and caught up with some others. I took a wrong turn because I hadn't placed [oriented] my map with my surroundings and so I went the wrong way.

Andresen (1977) stated that "being lost" is not an appropriate phrase to describe what happens in orienteering. He preferred the use of the term "dis-oriented" which, he said, is more reflective of our experience. By re-orienting oneself with map and surroundings, orienteers may more quickly recover themselves and get back on course.

Elizabeth revealed her insights about the importance of map reading and being oriented with the following comment,

> Without map reading skills you probably get lost. Orienteering taught me to trust my instincts and not go along with others, if I didn't think they were right. When I was out on our course, this was important to remember because it occasionally made the difference between being lost or not.

The key phrase here is "to trust my instincts", suggesting that she had to work out the best way to go by herself using her newly acquired skills without being unduly influenced by others. Elizabeth did not want to be lost, but still wanted to make her own navigational decisions. She shared her experience,

> I was a bit puzzled., I was worried that I was going to head off in completely the wrong direction and never to be seen again!

Fortunately, most semi-wilderness areas for selected orienteering competitions have at least one well defined boundary, generally a linear feature such as a road. Safety bearings are provided to novice orienteers. For instance, head due south by setting compass at 180° degrees and a road will be located. Thus, if disoriented the orienteer travels on this particular safety bearing, then a recognizable location will be reached. Generally, at this point in time, there is an option to either report back to the finish area or return to complete the course. A decision will be dependent upon individual feelings and either option is acceptable.

Sally spoke of another dimension, that of being constantly oriented,

> I found it difficult to orient myself and figure out where I am. So I didn't sprint the whole way to make sure that I didn't get lost...you'll just be too rushed to stop, figure out where it is you are and where you are going. If you don't understand, then you're lost.

Sally expressed a real apprehension of being lost throughout the instructional unit on orienteering, thus she made a sensible decision to travel slowly in an endeavour to make fewer navigational errors and took additional time to check out her precise location and intended route on the map. She described her experience in this way,

> Scared! I was scared that I would get completely lost and everybody would forget about me or something like that because I had only been lost before. I never had a really positive experience during our unit but now, I realized that it was going to be easier than I had thought.

Fear of being lost or rather not being found and left behind was a very real part of Sally's apprehension towards the class orienteering event in Lighthouse Park. However, she continued in a more positive way as she reflected upon her actual experience,

> I was in the lead. I wasn't on my own as I could see people behind me. Then between the 4th and 5th controls I remember thinking that this one was too far and I was kind of getting lost. But I was just so surprised from the start to number 3 that I could do it because all the times we had done orienteering before, I had been pretty lost. I had just followed everybody else, but this was the first time that I actually did it on my own.

She recalled her final thoughts about her orienteering experience in this way,

> I felt great at the end because I went into it [the event] thinking I am not going to rush... and you know, it was really great!

Thus, in having overcome a very real fear of being lost by completing the course at her own speed of travel, Sally had revealed an inner determination to do well. She was duly rewarded.

Caroline shared her feelings of being the first participant to leave the start area in Lighthouse Park,

> I wasn't really feeling that great about orienteering at school and then I realized, oh no, I'm not going to go on my own... I was scared because I wasn't

> sure if I could do it on my own, especially when I was the first one to go off so I couldn't follow anyone. I guess it was just a feeling that I wasn't sure if I was going in the right direction. I felt unsure of myself and my capabilities since I had never done anything of this sort before and I was anxious about getting lost in the woods.

As a novice orienteer, it was an unnerving situation for Caroline to lead off the event. However, she seemed to be accepting of her fate that someone must go first, a unique experience for any orienteer. Caroline was aware that the moment had arrived for her to use those untested navigational skills in a real situation of a class orienteering event. She described her thoughts in this way,

> I think when you are orienteering in a place that you have been several times, it's not so challenging because you have an idea of the landmarks. When we went to Lighthouse Park, I had never been there before so I didn't know what to expect...it was kind of different, the woods and everything in the area was so totally different in surroundings.

Her apprehension of being lost may be equated with her fear of the unknown. She accepted that doing something for the first time is necessary in order to provide a navigational challenge but her response to this situation remained a matter of immediate concern. Thus, Caroline suggested that you have to wait and see what happens. In this case a successful experience was shared by Caroline and her classmates.

Christine expressed her concerns about being dis-oriented,

> I always find it difficult to stop. I realized that I had taken the wrong turn and that really confused me. I'd say where I am because I don't know where I am, which trail I had taken and should I go back? But, I can't remember where I took the wrong turn and that always worries me. As soon as I find out I'd taken a wrong turn, I always have to go back to where I was, to start over again and decide which way is right, otherwise I would totally lose myself, disorient myself. But I felt once I followed someone else, then I had lost control.

Christine described in vivid terms the dilemma of novice orienteers who head off too quickly without first having established a sound relationship with the map. This factor is particularly important when participation occurs in a completely unknown setting. Christine shared how she sensed that she had lost contact with her map and, in consequence, returned to a familiar location from where she had come before proceeding further on the course. At that point she would once again be united with map and surroundings. However, Christine had made a most important decision. She would not follow anyone, instead she would determine where she was presently situated then use her map to find her way towards the next control location. She described the outcome of her decision making ability in this way,

> It was a really good feeling being able to find the controls by yourself...out there, I was challenging myself, but also I was intimidated by going out there and not getting lost...by going slowly, I started doing really well and that built up my confidence.

Newly acquired navigational skills of map and compass coupled with determination resulted in providing Christine with a successful orienteering experience in which she did not get disoriented, despite a natural apprehension at the start of the event.

Barry described similar feelings of doubt,

> The park was unfamiliar, you didn't recognize anything, so you had more of a feeling of being lost. I think I felt sort of nervous every time I'd take a curve or took a turn when the trails splits, until I realized I could look at the map. In this way, I'd "hit" all the controls.

Barry was able to experience the true value of his map with the realization that his navigational objective of locating all controls could be more readily achieved by efficient use of his map. He continued to share his accomplishment with these words of practical advice,

> The skills that I had to use were having peripheral vision and the ability not to panic, when you think you're going the wrong way... I think you have to be extremely competent in your abilities because you could run along without having to check the map to make sure where you're going. You need to know instantly if you are going the right way.

Barry appeared to be self assured in his newly acquired navigational skills, which he used effectively to counter his fear of being lost as he said,

> At the start, I did feel as if I may get lost...about two or three controls later I realized I knew I could do it and I wouldn't have any trouble. So I said to myself, if you're doing this right, you won't have any trouble... I kept cool by using my orienteering abilities... I guess you would have to stay on a level plane and then you don't get lost.

Barry was able to resist a tendency to panic when a feeling of being disoriented resulted in some uncertainty by keeping calm and making productive use of his skills.

Oliver suggested a different point of view by saying that,

> You have to run as fast as you can, but you still have to find your bearings and know where you are and where you have to go and still run the course with a fair speed without getting lost.

He was saying that although speed is a dimension of orienteering participation, it must be balanced with navigational skill and an ability to keep correctly oriented so that a course may be successfully completed. Oliver provided a more philosophical approach to being lost with these words,

> Getting lost in a different environment, I don't think it's that bad personally, because you have to bear it out and try to find your way out.

In this way, Oliver was presenting an idea that "being lost" was part of one's navigational activity within the context of orienteering. Acceptance of this dimension of the sport may alleviate fear of being

disoriented. John expressed his thoughts about disorientation in this way,

> Once or twice I got confused and wondered if I was the right way, but each time I succeeded in finding the control. I think the scenery and different landscape helped to orient myself.

It was interesting to note that John used the phrase "the right way", suggesting that there is also a wrong way, which is not the case in orienteering participation. All individuals select their own route, which may be the best way for one person, but not necessarily for another. His reference to change of scenery suggested an awareness to his immediate surroundings and that he had to concentrate in order to find a best route through that forested environment. John described the importance of being correctly oriented,

> You don't really have to be worried about <u>being lost</u>, because I could always find myself...there were so many reference points on the map. It really wasn't that bad <u>'being lost'</u> for if a person doesn't have any self confidence, he can't really succeed in anything, even in school work.

John had realized that personality and more specifically self confidence has a direct influence upon one's navigational ability, particularly in an unknown forested area such as Lighthouse Park,

> Map reading is important to find the fastest way to finish the course and so <u>you don't get lost</u>. I counted on all my skills to find myself through the woods.

Ernie had learned that he needed to be reliant upon his own skills and in particular his map reading ability to avoid being disoriented "to find myself through the woods" was an interesting phrase and revealed the essence of orienteering. In doing this activity, he was discovering himself and his potential navigational ability.

Two of the class group, independent of each other, made the same initial navigational error at the beginning of the course. Both Peter and Bruce turned in the wrong direction as each left the start area. Later they met and together they found the third control flag having missed finding the first two controls of the course. Peter's comments revealed some thoughts about himself,

> I always doubted myself and I'd stand there and I'd think am I really here. Then I'd just walk around for a while and I'd figure where I was and I'd run as fast as I could. Then, I'd get cross, as a doubt would spring up in my mind before I realized it. All the trails I did take, I had doubts, yet I was correct in my first assumption, but I just could not trust myself.

Peter has realized the importance of making navigational decisions. All orienteers share this uncertainty and through experience they gradually gain the confidence and skill to go with their initial decision. Peter provided a vivid description of his and Bruce's experience of being lost,

> We were really lost, so basically the only experience for us was sort of stumbling around in the park. I remember when we found our first control flag [third control on the course], we were really quite happy, but we had missed the first two controls... I had been running with Bruce all the way through and we had pretty well given up in a way because we realized that we'd probably be last. We had been wandering along the shore for so long, it was getting embarrassing When we came in, everybody was saying 'you are last!' or 'were you lost?'

Peter appeared to have experienced quite forcibly the dichotomy of being lost, that of disorientation and fear of failure, coupled with concern about what others may think of him. He described the relief, rather than a sense of achievement at finding their first control. Peter continued to describe his experience in more detail as he said,

> We weren't really lost because we kept cheating... we'd see people and ask them if they had seen an orange and white marker. That is how we eventually got back out to the correct path.

It is most creditable for him to acknowledge the fact that he felt they were "cheating". However, in orienteering it is acceptable to ask another orienteer for directional assistance if one is truly disoriented so long as the specific location of the control flag is not revealed. The majority of orienteers assist in this way particularly with novice orienteers so that they will become oriented to the map again. Peter shared other thoughts of his experience by saying,

> At the third control, finally, we made contact with the map and realized where we were and could find the other controls...from that point, it was really quite simple...we just got off to a bad start so once we got back on track, we didn't really have to look at the map that often. We could look at it and figure out where we had to go...before that, we were really lost.

A sense of the map being vital to an orienteering endeavour is revealed through the phrase, "finally, we made contact with the map". Peter cheerfully described after that connection had been established, navigation became a viable enterprise. He continued,

> Something seemed to click into place...you see at the beginning, I didn't know where I was. I didn't understand where my starting place was. Probably if I'd listened more carefully, I would have been able to complete the course, but I wasn't awake, I didn't understand and didn't get it.

Peter did not get himself, the map and his surroundings oriented before it was time to leave the start area, although competition maps were handed out well in advance of the departure of each individual. A loss of concentration at a crucial moment may have resulted in Peter experiencing "being lost."

> It never occurred to me that I was lost...when I say I'm lost; to me it means that I have no idea where I am. But, if I say, I'm not on the correct path, it

> means I know where I am, well, I know, basically, where I am and I could get back to where I should be. But to go where I want to go, when you don't really know, that is difficult.

Peter had some difficulty in describing the exact experience of being lost. He referred to some uncertainty in appreciating the difference between thinking he knew where he was, to absolute knowledge and certainty of his actual locality. Peter concluded on a more philosophical note with this comment,

> Sure, being lost is part of our experience in orienteering but it doesn't help your orienteering time! That's why we probably didn't stop...so we didn't really give up hope...we kept running our best. So, if I get in trouble again I'd try and get back on the main trail. Maybe next time I'll stop and look at my map and see where I am...waste seconds at that time, not waste them, but use up those seconds in a different way. I think if I go orienteering again that I'll make sure I know where I start from the map.

A fundamental concept in orienteering is to keep oriented by maintaining a constant link between the orienteer, the map and immediate surroundings. Peter was suggesting that orienteers should start as they mean to continue by endeavouring to know where they are at all times by spending a few valuable seconds ensuring that this harmonization had been achieved at the start of a competition. This is a sensible policy for all novice orienteers.

Bruce, who, along with Peter, became temporarily disoriented, shared his experience of being lost,

> In my experience, almost all the times I went out I got lost or ran into swamps and stuff...I felt that feeling all the way through when I couldn't find my path. I knew I was lost and I tried to stay pretty calm and not let my emotions in the way. So I was mostly running around and took a wrong turn. I'd stand there with my map for a couple of minutes. I'd like to double check just to make sure that I didn't go the wrong way again. I was beginning to get doubts because the control was supposed to be right

> off the trail. In orienteering, if you're lost, you're not in the crowd, you're separate.

Bruce's comments reflected uncertainty in his navigational skills. His term "path" which represented a route taken, appeared to adequately describe his novice level of orienteering experience to the extent that there are always several alternatives available in selection of routes. Bruce endeavoured to remain calm and confer with his map, despite his dilemma of being disoriented, which was a sensible approach to take if he was unsure of his precise location. Bruce revealed a deep sense of being alone when he was disoriented by saying that "you're not in the crowd, you're separate." Even though there may have been others in sight, his feeling of separateness persisted. He felt different from them because he had experienced "being lost". This displayed itself in a sense of loss of harmony in both a navigational sense and in interaction with others. Bruce shared some impressions of his "being lost" experience as he said,

> I was thinking at the time of not getting lost, which, of course, I did anyway. But, I always feel sort of insecure at those times. I thought how I'd just "hook up" and start following somebody, the first person I met...so when Peter came along, I felt quite relieved that someone else had taken this same path too!

He appeared to be able to accept his feelings of insecurity to the extent that he knew how to compensate for his navigational inadequacies. He had planned to join up with another orienteer if he became lost. Bruce continued to describe his dilemma in this way,

> I didn't panic! I kept calm even though I wasn't sure where I was going, but I thought I could find my way back to some place...although nothing was familiar and so I had to rely on this piece of paper which didn't look like anything to where I was going.

Here, Bruce attempted to describe what he would do, if he had remained

alone. The reference to his map as a "piece of paper" may reveal the root cause for disorientation as map reading ability provides the basis for orienteering. Fortunately, his predicament became a shared experience with Peter. Finally, when this apparent ordeal was concluded, Bruce shared these thoughts,

> It does give you a sense of accomplishment, once you actually completed it. When I came to the clearing, I felt really good, even though I was the last one ...once you finish you don't feel so tired, you just feel warm inside...

Thus, Bruce had left the comparative safety of a bright grassy open area that had served as the event starting place and ran into an unknown forested area. He had been lost, teamed up with a classmate, completed the rest of the course with him and had experienced a sense of achievement mingled with relief of his return to normality.

This section has reflected upon the student comments concerning a fear of being lost. Although a common experience to all orienteers, these twelve students have shared their unique experience and have individually provided an interesting diversity of insights. Fear of being lost is an accepted part of orienteering and can serve as the basis for developing effective navigational skills. Most students admitted to being scared to a loss of concentration and to feelings of self doubt as dimensions of this experience.

In their description of being lost, the students shared the experience of feeling a deep sense of being alone, the recognition of a conscious need to go the "right" way and the difficulty of stopping to re-evaluate one's precise location, so necessary to become re-oriented again. At another level, other dimensions were described as an integral part of being lost; the students suggested that trusting one's instincts,

self reliance and not following others were important to their navigational experience. However, insights were provided into how they would overcome the contingency of becoming disoriented by suggesting a steady pace and using their newly acquired navigational skills.

Orienteering is an activity that provides an opportunity to be confronted by feelings of navigational uncertainty and disorientation. The experience of overcoming the fear of being lost is the challenge of successful orienteering.

Learning Through Experience

For novice participants orienteering is an activity of decision making and feelings of uncertainty within a desire to compete. However, if the orienteer has a positive attitude, then he/she is half-way to success (Holloway, 1980). To compete against oneself is a response to a call of the unknown and a willingness to accept navigational challenges. Learning occurs regardless of fear of the unknown that is an integral part of orienteering. Fear is part of the orienteering experience; furthermore, it may represent failure in course completion, scared of being disoriented or a combination of both. However, there still remains an irresistable excitement and desire for action involving bringing together mental stimulation and physical exertion in navigating through an unknown natural outdoor setting.

Reflection upon navigational experiences leads each orienteer to realization that an ability to use navigational skills has been effective in a competitive context. Successful course completion demonstrates learning, whereby knowledge of where one is located on the course at all times (Berglund, 1979) is the key to success. Learning to overcome fear of being temporarily disoriented provides its own rewards as feelings of success are experienced by each novice participant.

The challenge in orienteering is real and ever changing. Participation creates many sensations within each orienteer. Each is alone and away from others. At times, reliance on past map reading skills results in surprise to see the reality of a scene that was previously only recognized by a mental map. It is an ability to apply past experience in a current incident that permits navigational errors to be viewed in a more positive light in later situations. Although each navigational experience is unique in itself, it is imperative that transfer of learning does occur, avoiding a repetition of poor judgment in navigational decision making on successive occasions.

Carlos remarked that "orienteering is different every time I go out" and John confirmed this when he said, "my experience of orienteering was different each time I went out." These reflections from two novice orienteers are upheld by Ted (national champion) who endeavoured to describe these differences from his wealth of navigational experience,

> I've found different environments give me different feelings. While running on flat open roads in farmland I feel very alone and small and the time goes slowly. However, when I come to a narrow twisting path I feel exhilarated and want to run fast. It feels like I'm running faster when I'm not. I look all around me. I notice things far ahead and even behind double checking. I am constantly trying to imagine in my mind what is ahead of me by looking at my map. Time goes very quickly. If everything is going smoothly and then orienteering [navigation] demands a great deal of concentration, I finish the race and mentally feel like time has just whizzed by.

With this vivid description, Ted has described himself within his total experience of orienteering relating feelings about his mode of travel, his environmental observation and his thought processes related to navigation. It is hard to understand the true spirit of this sport without personal involvement (Bengtsson & Atkinson, 1977).

Orienteering is an individual event that allows for independent response to a variety of navigational situations. Learning how to react positively to environmental pressures, to apply concentration, to think and make decisions while travelling and to be observant of immediate surroundings are all important dimensions of this sport. The whole beauty of the sport comes from within (Andresen, 1977), whereby orienteers are able to challenge themselves to go beyond the limits of their known ability, to begin to realize their potential and experience the satisfaction of being successful navigators through a previously unknown environment. It is important for novice participants to begin to appreciate these dimensions within the sport of orienteering.

CHAPTER 5: PHYSICALITY

Awareness of Physical Self

In the physical education program students are encouraged to experience the use of their bodies in a variety of physical activities and this experiencing is no less important in the sport of orienteering. Physically active students experience their bodies in a way distinct from less energetic people. They are more aware of the mechanical operation of the body. They enjoy to move and do so with efficiency. This enhanced body awareness is certainly true of elite orienteers whose well disciplined and trained bodies are acquainted with the rigours of a daily exercise regime in order to perform at high levels of physical proficiency in the forest.

The body was constituted for movement. To fully appreciate the innate mobility of the body regular exercise must become part of life's routine. Students have an opportunity to knowingly use their bodies through activity in a regular physical education program, but in orienteering they are able to experience their bodies in other ways. Each individual experiences his/her body in different ways; for instance, the body as it is seen through the eyes of another. John, as a novice orienteer, provided an example of this experience,

> I remember running the hill up the parking lot and everyone was looking at me kind of strange...they were just looking.

John was a physically able and athletic individual who liked to run, yet in this incident he felt uncomfortable. He moved efficiently. He wanted to travel quickly in order to realize his competitive expectations in the

orienteering event. However, to John it felt somewhat unusual to rush through a parking lot, where others were preparing to set out for a leisurely stroll through the park. He was not ashamed of his body and yet as he recalled this incident, the "strange looking" of the people made an impression and he may have hoped for other runners to be close by, suggesting some sense of insecurity.

Judy, an experienced orienteer, recalled her feelings of others as she approached the finish chute,

> Soon I am running along the ribbons to the finish... uphill, of course, and all those people watching... have to try to run up this hill, can't walk with all that crowd there.

An orienteer's appearance is never the best after completion of any orienteering event. The body is physically tired and its fatigue is revealed through a slow motion leg action in the painful uphill struggle to the finish. At this moment, there is speculation on how an aching body will respond to what feels like an ultimate test of physical strength. Will the body keep running until the end? Generally, orienteers are conscious of the spectators' encouragement during these dying minutes of the event. Conscious of experiencing the mechanized momentum of the body's motion, every muscle seems to be rebelling against any movement it is required to perform but the finish line is reached. Cheerful acceptance of well intentioned comments such as, "You look a mess...", "What happened to your knee?", "How were your legs?" follows course completion. These comments reflect the students' reactions after they had finished their competition.

Movement feels good in a body that is the centre of one's existence. Unified functioning of the body is the physical experiencing of mobility in the context of orienteering. Cynthia, as a novice orienteer, shared her difficulty in expressing her feelings of self,

> In a way, I was really conscious of myself and yet I wasn't though. I mean, it can be a kind of consciousness where you are walking down the hall and realize your hair is in a mess. But, out in Lighthouse Park, it was a different kind of consciousness; it's your being out there, I guess, that was just different.

Cynthia was aware that the experience of herself was different depending upon where she was located and what she was doing. Natural outdoor environments in a unique way provide each individual with a distinct experience which is hard to explain, and yet it is the uniting of self and surroundings so essential in an orienteering encounter.

Christine, in support of Cynthia's sensitive description, thoughtfully explained that her orienteering experience was,

> a whole different experience but I don't think that I ever related it to me being there.

Christine was suggesting that she allowed her orienteering experience in Lighthouse Park to absorb her totally, both mentally and physically, and that only in reflection did she appreciate it was she who was the essence of the event experience itself.

Awareness of physical self, according to the students' experience, was being aware of others observing their mobility and how they were becoming more conscious of their physical self during activity.

Experience of Being Physically Fit

Physical fitness is an important component of physical education. The students in this study typified the wide range of both physical fitness and ability common in normal classes. In order to experience success in the sport of orienteering, participants have to be physically fit and have undergone an appropriate training program. Palmer (1984) suggested that,

> Orienteering is a difficult technical and physical sport and if its satisfaction levels are to be deeper than an undignified masochistic scramble in

> an alien forest, then skillful training is demanded. (p. 20)

Orienteering is an activity based upon fast and efficient movement through the forest, thus prior physical preparation and a high level of physical fitness are important. However, with novice participants, navigational ability takes precedent over physical fitness in the initial stages of learning to orienteer; whereas, experienced orienteers endeavour to maintain a fine balance between these two dimensions. John, as a novice orienteer provided this observation,

> If two people have the same amount of skill in map reading and compass, then it just boils down to who is faster and that is fitness.

The concept of fitness being related to rate of travel in order to perform at maximum speed and thus achieve competitive success is an important issue to John, who enjoyed physical activity.

Dick, a seasoned orienteer, shared thoughts about running and fitness,

> I have experienced the joy of running, the feeling of supreme physical fitness, when I have felt that anything in the human physical realm is possible... in training, I run for fitness, but to orienteer is to forget that one is running.

Dick suggested that he had experienced being fit when orienteering. This efficient mobility allowed him to focus his mind on navigational challenges rather than being specifically conscious of his body. His body was not a deterrent to his movement but rather an active participant that allowed for a duality of mind and body. However, in order to experience an effective level of human physical fitness, Dick subscribed to the importance of training as he suggested that "the feeling was usually arrived at after weeks of gruelling and often boring training." Yet, orienteers have to be aware of their physicality, reflecting intense

physical exertion experienced during a competition. To be physically fit is a personal decision. It is possible to orienteer without a intense level of activity. However, as Thornley (1982) stated,

> An orienteer needs first to be able to navigate around a course, then needs to get fit enough to run around that course and finally needs specific training to be able to run progressively faster around an orienteering course. (p. 31)

Thus, a training program must suit the needs of each individual in a sense that physical fitness, the general tone or level of conditioning of the body prior to an event, is the result of how one's physical self is experienced during an orienteering activity.

Peter shared a personal reflection of experiencing of his physical self,

> After I exercise alot, I feel very good, I feel cheery, So that is how I felt after [the event] and I didn't feel any physical discomfort.

With this observation, Peter suggested there was a third dimension to fitness that of one's attitude towards physical activity, which would reinforce the mobility of orienteering as being a positive experience.

George, an experienced orienteer, aptly spoke of his orienteering participation as,

> coming to the point where your [navigational] skill and fitness level are such that you can run through difficult terrain for over an hour.

This point of view was shared by Dick who said,

> When I orienteer, I forget running and fitness ...I am conscious of labouring in tough areas, I slow down or walk up hills...my mind always occupied, whilst stress on my body is almost incidental.

All orienteers would support the concept of an exercise/training program because an ability to run efficiently is the competitive essence

of this sport. Many other forms of physical activity may become part of a lifestyle, but running as a universal practice is important to an orienteering experience.

From the novice perspective Sally shared her sense of physicality in relation to her level of fitness,

> I'm not that fit, but I've been involved with team sports quite a bit...I did push myself, but I didn't sprint the whole way.

Sally was realistic about her physical ability in the recognition of her personal limitations. At the novice level of orienteering it was difficult for participants to appreciate the value of fitness specific to the sport, in this case to develop an ability to run efficiently through an undulating forested landscape.

Orienteering participation ranges from a walk through the forest to a fast foot race, but it is necessary to train for participation at both ends of this continuum? Training representing technical preparation is "rehearsal" prior to experiencing an actual orienteering event. It is an attempt to practice skills and navigational techniques in a comparable setting. Although training sessions occur in less pressured situations, they reflect the authencity of an event in every way, without the necessity of travelling at maximum speed. Oyrin Thon, world champion from Norway (1982), said,

> Orienteering is for me a race, in which at any time, I decide how fast I can or have to run. Most of my training is developing the optimum speed. (p. 10)

Oliver, during the initial stages of his orienteering experience, suggested that an ability to pace himself was an important dimension of participation, thus recognizing his level of fitness,

> You had to pace yourself quite well, this is the quality of a cross-country run.

Carlos elaborated on this theme by stating,

> Each person can run faster and I could have run faster, but I ran at a steady speed...I'm not out of shape and that definitely helps.

Carlos considered that running fast might represent a good time, yet course completion at a consistent pace was a better strategy.

Despite the importance of technical (navigational) skill acquisition through a method that is appropriate and best suited to each orienteer, it must not be forgotten that without physical ability to travel efficiently over varying types of natural terrain, orienteering ability will not be fully realized. It is the harmonizing of these two fundamental areas that result in technically sound orienteering.

Former world champion Thon (1982), stated that,

> A perfect orienteering race is utopianism...things can always be done better and that's the fascination of orienteering. (p. 10)

Without competent running ability the orienteer would not be able to travel into more isolated areas of the forest resulting in a diminished experience. However, the level of physical involvement is the decision of each participant. It is important to be physically fit for orienteering and this concept was introduced to novice participants ~~during the initial stages~~ of the orienteering instruction.

Running Endeavour

For the students, running in the context of orienteering became a more meaningful endeavour because there was a purpose to their activity. It is running that provides inherent excitement when moving through a variety of different terrains in a natural outdoor environment during the course of an orienteering event.

Cynthia and John have different points of view concerning their mode of travel during their orienteering experience. These descriptions

reflected running in two distinct natural outdoor areas both of which were landscapes of primeval forest. The first area was an undulating rain forest with a comprehensive network of trails and lacking in abundance of small natural features. The second area was a rugged and rocky area of dense vegetation and lofty evergreen trees with a variety of small features accessible from most trails. The first location was well known to the students because of its close proximity to their school while the other area was virtually unknown to the entire student group.

Cynthia recalled that during their orienteering unit,

> I jogged, but normally I am really inactive...I haven't danced for a long time and that was about a year ago...a few times I ran downhill and it was a nice feeling. Yet, it felt good to be just jogging along too.

In contrast, John shared his thoughts,

> You have to be physically fit, otherwise it takes the fun away because you do get hot and sweaty. If you were really unfit you would feel so tired...although you don't have to run the whole way and you can look at the scenery! Being unfit hampers your orienteering, because when I was running by, a lot of people were just walking, I think they were basically tired or got a cramp.

Cynthia confessed that although she had been comparatively inactive recently she was pleased and surprised with the feelings she experienced as she jogged. "It felt good" expressed her experience of running. However, for John, his level of physical fitness and running proficiency were important. He knew his own capabilities and accepted the fact that he could run well. The statement "I was running by a lot of people who were walking" reflected his interest in being fit in order to really enjoy this activity that demanded speedy locomotion. Running appeared to play a dominant role in John's orienteering experience and he used his physical skill to advantage. However, he was aware of his classmates who

may have been experiencing some difficulty in their mobility and felt their compensation was the opportunity to enjoy the scenery. It is essential in all orienteering endeavours to relate to one's surroundings.

Running activity for this class of typically mixed physical ability, made a distinct impact upon each student:

Walter: It's hard, tiring and takes good health.

Carol: I got really hot and sweaty.

Janet: Often the paths were sore on my feet.

Paul: You must have a strong body and be in good physical shape.

Joan: Very physical...to me meant a lot of running.

Bruce: Orienteering is running, a sport that use great endurance.

Barry: You don't think about running, unless you are tired.

Michael: You must be able to run or jog through rough terrain for long distances.

Celia: You need to run or walk in the quickest and easiest way for you.

Steve: Orienteering involves good health and running.

Ernie: Running through the woods as fast as I could.

Reflecting on the thoughts of these students suggest that running was a means to an end and not an entirely and enjoyable activity. Their comments indicated that running was not a pleasurable experience: "you were expected to get bored"; "be hot and sweaty after running"; and "you had sore feet and ran long distances". Running was definitely a physical experience and it would be good to have been in better shape. However, the realization of their physical ability and the nature of orienteering revealed a more positive attitude and suggested a more preferable experience compared

to "just running". Through these comments the girls described their running experience in a more critically constructive sense:

Christine: Orienteering is physically demanding, so you learn to go at your own pace. I started out and I felt really energetic, a real burst of energy! I felt most comfortable at a slow jog, then found myself picking up some good speed...I knew that I was going to get out of breath and be tired...but I was in the lead until the very end, which gave me energy and determination.

Elizabeth: I wasn't tired and I thought after seeing the film that this is going to be terrible, I am not doing that, I am not running...but I did! I don't find running very exciting and don't mind it, if I don't have to run...I hate running in P.E.! But I go out for runs by myself, go where I want and do how much I want and that is fine.

Caroline: I wasn't very tired on our course, but after watching the film, they were running all the time and after a while they were panting...then I thought, I am just going to walk! Then I decided to run after I found the first few controls, because when you punch your card, you actually stop and I guess that is just a little break and you can catch your breath... Most of the time I was running and strangely enough, I didn't feel very tired!

Edith: Orienteering requires me to be fit and strong, because it includes jogging. I am glad that I had no choice or I probably would have never tested myself or my physical strength and I enjoy jogging.

Sally: I am not that fit, but I have been involved with team sports quite a bit. I didn't mind running in orienteering nearly as much as I dislike just jogging. I detest having to run along with no purpose...I need something to go for.

The most predominant reaction that emerged from these remarks was that each student realized the importance of being physically energetic. As a group, they were not as active as they felt should have been, although it was admitted that orienteering was not such an alarming activity as first impressions might have indicated (after seeing a film) and generally, they were glad they had had an opportunity to participate.

Each girl provided a basic premise on which her physicality was experienced in the context of her orienteering encounter:

- The sport is physically demanding.
- I hate running in P.E.
- I am just going to walk.
- I am glad that I had no choice, or I probably would have never tested myself.
- I have been involved in team sports.

Later, Sally shared a comment that reflected the essence of the thinking of these girls' about the physical dimension of orienteering,

> You have to use your intelligence to make up for your lack of speed. I did push myself, but I did not run the whole way.

Oliver came to a similar conclusion as Sally. It was the effective use of both the physical and mental capacities that permitted an orienteer to function well in his/her orienteering event,

> Orienteering is more of an intellectual sport, because you have to use your mind more than your legs really.

Orienteering is known universally as the "thinking sport". Thus, it is remarkable that these novice orienteers should they have recognized their physical worth so accurately, by intimating an expressed need for their mental capacity to solve navigational challenges in the physical completion of their event.

However, the boys suggested a different perspective,

Bruce: I've never been a good runner, maybe I should have gone out there and jogged a couple of miles, as I am not very active usually... Orienteering took my mind off the tedium of just running.

Carlos: Running through the woods is fun. It gets exciting and you run fast...I'm not such a fast runner. Generally I found that keeping a steady pace, even though I passed people, was better.

Oliver: You have to push yourself, that's basically it, you just have say 'well I am going to try'. Naturally, you try to go as quickly as you can. I forgot to pace myself and I got very tired.

Peter: I think you have to be fit to win, I mean really fit. Fitness means being able to be proficient at any sport that I choose...the more fit you are, the faster you will be able to run...I ran as fast as I could.

Their comments reflect a more practical dimension of running. Each boy appreciated the extent of his physical potential that was held in tension with his known limitations. A key phrase emerged as representative of the essence of each individual's understanding of physicality.

"I am not very active." Bruce made this honest comment, which spoke highly of a boy who was not physically skilled. He shared on another occasion "...beside the pain of running, I had to keep going..." Bruce did not enjoy running. Maybe his concern of being alone, becoming lost or not finishing the orienteering event drove him forward? Under pressure the body was physically capable of the goal Bruce had unconsciously set himself.

"Keeping a steady pace." Carlos was a consistent runner and expressed his thrill at passing others. He felt physically good about himself and was the class winner in the event.

"To push yourself." Oliver was basically a slow mover by nature. He is an intelligent boy who challenged himself (he took a route away from the trail system) and began to better estimate his physical limitations in varying situations.

"To be fit." was important to Peter suggesting that it was the difference between being proficient and winning at a given sport. This group of students enjoyed their running in the context of orienteering

because as so many of them commented "it was running with a purpose". The students did not, as a whole, particularly relate to running for its own sake as part of their physical education program. They seemed to need a greater motivation to run and the orienteering unit provided that incentive. Understanding of mobility, in the context of travelling through an outdoor setting as occurs in orienteering, was one of the factors that the students began to appreciate during the unit.

Movement, as a basic locomotive ability, is an integral dimension of every human being. It is an act of moving from one place to another (Webster's, 1981). This definition is particularly meaningful in the specific consideration of orienteering. The essence of orienteering movement is vividly portrayed by an experienced orienteer. This concept is portrayed in a powerful word picture shared by Judy in which she described the physical impact of her previous orienteering experience.

> Competitors try to prepare themselves for the event: stretching exercises, shoe laces tightened, compasses adjusted, watches checked against start clock, ears pricked to hear names called, listen for whistle...Go! Off and running... I grab my map... I decide to take trail...turn off at little knoll... run up that long re-entrant...I quickly check code as I run towards a small patch of orange and white...punch it! I take a quick compass bearing and I run as I consider my best route. Map is good ...I can check off features as I go. No need to pace-count, terrain is easy to read... I study my map as bush is dense now...branches catch my hair, scratch my face and pull at my clothes... I shouldn't have come this way! I have to cross a wet overgrown meadow, my shoes are squelching and I am covered with burns. Now, I have a long uphill stretch...my legs protest, my eyes are stinging with sweat. I look out for a cliff, a quick check of the compass and I can run again...downhill! Soon I am running along ribbons to the finish, uphill of course...my lungs feel as if they will burst and my legs are going to fall off...I push and push...there is the finish line. I hand in my map and sprawl on the grass.

This description revealed its message through a sequence of action words, and in so doing others are able to vicariously share Judy's locomotive experience through the forest from the start to the successful completion of her orienteering course. Other orienteers, particularly novice participants are able to relate to the actions of her word picture, although they may not have visited these specific locations, but have experienced similar action situations in their beginning orienteering encounters.

Initially, movement is an early means of communication. Children speak without words and through their actions meaning is conveyed to others. With maturity, the young are able to relate to verbal or written descriptions of others without being physically involved in the activity itself. There is a need to move and the intrinsic worth of any movement experience is the reflection upon and later its transmission by language or text. Movement provides an opportunity to explore and encourages overt expression in the experiencing of one's surroundings. Through movement there is learning because one learns by doing. To experience self and one's surroundings through movement is an expression of oneself upon that environment. Movement forms an interconnected link in this dynamic inter-relationship through which one's vitality is generated. An innate desire to move never loses its importance, although the impact of movement efficiency may be questioned. Movement of children is often done for its own sake - it is a joyous expression of the young.

Fitness suggests an increased level of physical productivity which was the case as these students experienced the sport of orienteering. There was a sense of purpose that governed their activity, for instance, movement as a means of transportation through the forest. No matter how the body is moved, it is the motion itself that is essential to

existence. "Running in the terrain becomes a celebration" is a sentiment that was shared by Bob, an experienced orienteer. The excitement involved in movement need not be lost as students mature. It is fortuitous that many individuals are rediscovering an interest in physical activity and are once again enjoying mobility that is essentially being experienced for its own sake in a variety of recreational pursuits. Cynthia provided a concluding comment when she said,

> For every person it's going to be different. Each person that passes by, they are going to have different feelings and that is really nice, that each person is doing it their own way...orienteering become your own experience.

Specialized Mobility

The students were provided the opportunity to develop an interest in learning about running and how there is a specific style used in orienteering. Most orienteers who enjoy this unique activity do so not only because they possess an efficient level of physical fitness and navigational expertise but they derive enjoyment from participation in a variety of natural outdoor environments. It is the experience of travelling on foot in an unknown outdoor wooded setting surrounded by nature that attracts a diverse range of individuals and family groups of all ages to the activity of orienteering. No one is excluded from taking part in an orienteering event because each person is permitted to participate at a level of competition that is best suited to his/her particular age, gender, experience and level of physical fitness.

To be physically attuned and to consciously experience a feeling of release of bodily tensions when travelling through any natural landscape is part of an orienteering experience. Olivia, as a novice orienteer

disclosed a sense of this physical awareness of herself with the following words,

> I began to run through the trails, my breathing remained calm, but the more I ran, the faster my heart beat. I could feel the blood pump through my body, as the sweat ran down my forehead. My pace is faster and longer lasting, so now I feel... I am finally getting in shape!

There was the reward! Her sensitive commentary revealed that she was becoming conscious of her physical self and a sense of achievement coupled with pleasure of "being alive" as thoroughly experienced through her orienteering endeavours.

Judy, an experienced orienteer shared a similar sentiment in her reflection,

> My physical abilities are challenged...running through the forest, I am conscious of breath being forced in and out of my lungs, heart is beating fast and trickles of perspiration running down my face.

With these words, Judy expressed that orienteering is a physical experience. A well functioning body provides the energy for mobility. The body is the power house. The level of physical fitness determines the effectiveness of locomotive ability through undulating terrain. She was aware of the physical functioning of her body. It was hard work!

Oliver, after his orienteering experience in Lighthouse Park shared the following thoughts about his physicality,

> I felt my "being" more in Lighthouse Park, because when I was running through the bush, I would hit my my legs and I'd scratch myself or something silly like that...this would remind me that I am still alive or that part of my body was still functioning.

Oliver suggested that to experience an isolated part of one's physical self on occasion is to feel conscious of total body movement during the act of running. John described his physical experience of orienteering in this way,

> I started running and found the first few controls, so you get renewed energy...you just get euphoria and then your adrenalin starts to pump...you start running again and it just keeps you going. After I had finished the course and when the adrenalin had stopped flowing, I was tired.

John appeared to have some understanding of his physical self with this use of the term "adrenalin". It was apparent that he had put a lot of himself into his participation and needed a determined effort to complete his course in a way that both met his physical needs and his expectations of himself as an athlete.

These descriptions were a reflection of a personal experience in which each novice orienteer had endeavoured to describe his/her physical self in a concrete way. The sheer effort of this physical activity is frequently a challenge in itself. Orienteering is a physically demanding sport, full appreciation of a total experience is dependent upon our level of physical fitness.

Technical Perspective

> Each sport has a rhythm of its own, each a lyric quality that flows with its unique motion, truth and emotion known only with the soul...as it breaks silence with its answer. (Ellis Price, 1983, p. 23)

Running, the form of mobility used in orienteering represents the "spirit" of this activity. Ability to traverse an undulating landscape, to circumvent obstacles and penetrate vegetation of varying density is a physical challenge to all orienteers. At the novice level of participation running is experienced as a conscious activity, whereas the mobility of world class orienteers has been described giving the impression of an easy effortless action over the ground (Boyes, 1986). Obviously natural talent is an important factor in running ability and technically proficient individuals will perform to a greater level of their potential. An enjoyment of running and insights into one's

physical ability are main criteria towards performing well and are particularly important to novice orienteers.

In orienteering participation there is a great deal of hill running. Andresen's (1977) quote, "The best way to prepare for hill climbing is to run up hills" (p. 85) appears to be an obvious statement. There are techniques to allow travelling both up and down hill to be physically less arduous. Phillipson (1983) provided a detailed description of technical running in orienteering and concluded that the goal in effective mobility in the forest is,

> The principle of maintaining a steady rhythm is the key to economical running on any uneven terrain. (p. 23)

It was important for novice participants to recognize the need to develop an efficient technique of running for competitive orienteering. Effective performance comes with experience and is gradually introduced at the initial stages of instruction as they begin to select cross-country routes away from the trail between control flag locations.

With the following comment Elizabeth suggested that she was confident about her navigational skills, but it was the running up and down that provided the challenge,

> I didn't have any problem finding the [control] point but it was running up and down those hills.

This statement was endorsed by Cynthia,

> I felt it was really easy and I didn't have to worry, then it started going downhill and uphill and it was getting more difficult and when I started not disliking it, but it was more of a challenge. It was more of a chore and actually, I had to fight myself to keep going by saying "yes, this if fun!"

Cynthia revealed that she had to encourage herself to keep going, particularly as course completion regardless of time had been stressed as the ultimate goal in this first time orienteering event for these novice

participants. This self emphasis to continue spoke highly of Cynthia's attitude and determination to complete the course. She shared a further reflection,

> I felt pushed...it was neat, because you could set your own pace and you could lead yourself along.

It was evident that Cynthia was aware of her own capabilities and her knowledge of herself was experienced in a successful navigator through the unknown terrain of Lighthouse Park. In the early stages of competitive orienteering, it is difficult for novice participants to be overly concerned about their running ability. There are so many other technicalities to think about and there is a tendency to consider running as a given. However, it is the synchronization of both physical and technical skills that results in successful course completion.

Orienteering as an individual activity allows participants to travel at their own speed. Some orienteers choose to slow jog with intermittent bursts of speed to compensate plodding up any steep incline. This travelling pace is typified by most novice participants. The elite orienteer matches the speed of travel with prevailing landscape and maintains a steady pace throughout the entire course.

Diversity of Terrain

Orienteering events occur in environments unfamiliar to most orienteers. However, with novice orienteers, it is necessary to utilize less undulating and more easily negotiable terrain with a good trail system so that confidence in their own effective mobility may be established. Throughout the orienteering unit the forest adjacent to the school was used extensively for a variety of navigational experiences. The area was familiar to the students and therefore proved to be a less threatening environment, but it was a more challenging setting than the

school campus where the unit began. However, these initial experiences proved to be invaluable before the students were provided with an opportunity to meet the environmental challenges of the rugged and rocky terrain of Lighthouse Park in the concluding cross-country event of the orienteering unit.

John reflected upon the dichotomy between physicality and the environment,

> If you are competitive then fitness really comes in because its basically endurance...that uphill part was the hardest, I think that is where I was really feeling tired.

Carlos supported the comment made by John,

> You go the way which you feel is quicker and faster and which will keep you more oriented to suit your own needs. If you feel that going through the bush will keep you more on track than following the trail and if it works for you, then that is all you should do.

Carlos made the observation that each novice participant reacted to the terrain in a personalized way and it should be anticipated that each individual orienteer would react uniquely to environmental challenges presented by that setting. Event organizers endeavour to select new and stimulating areas to test both the physical and navigational expertise of all participants. Challenge of the unknown is the first call of orienteering. To orienteers, this means a lack of knowledge of what physical challenges the terrain might offer prior to the event. The physical demands of environment are described from my experience,

> The topography of the terrain is represented by changes of elevation, density of vegetation and rugged areas that are difficult to negotiate. Each area will provide a different physical challenge, thus variance in definition of the ground has a direct impact on feet and legs of one's travelling body.

This physical and often drastic interaction with natural surroundings is an integral part of orienteering. Environmental challenges become realistic physical experiences as one's body makes contact with the landscape. The necessity of being physically fit equips orienteers at all levels of navigational experience to be able to traverse a variety of different landscapes in response to diverse mental challenges of the navigational enterprise. Bodily exertion at its "peak" is experienced by negotiating through challenging terrain and is another dimension of the orienteering experience. Pat, an experienced orienteer, shared some "action" experiences of physical journey through different environments,

> I have had streams to cross, mountains to climb, swamps to wade through, brambles to get by and logs to climb over...create self satisfied feeling of doing a tough physical task well.

The environment plays a dynamic role in the orienteering experience and sometimes once intriguing natural settings change into threatening landscape in moments. It is the anticipated changes of the outdoors that challenge the physicality of each orienteer. The following passage describes the confrontation with a diversity of terrain encountered in an orienteering event.

> Straining muscles to struggle up the side of a shallow ravine. Here, tired leg muscles are tense and the body, as source of power, is working hard to propel it up the incline. Conscious of breathing in a tough struggle through dense vegetation, hiking up a hill or traveling at speed across a flat open meadow. A pause to catch one's breath and conscious of vitalness as listening to blood pounding in the ears in concert with deep breathing and the experience of tired muscles. Becoming attuned to the rhythms of one's being, a physical experiencing of the body.

This description epitomizes the physicality of an environment encounter in orienteering.

Recall of environmental encounters and physical experiences were interrelated in debriefing discussions after the event by the students. The appreciation that their bodies were the "physical vehicle" for efficient mobility in an ever changing forested environment was realized during the orienteering event.

Physical Lifestyle

Each sport has its own unique form of physical activity. This is true of orienteering in the recreational dimension of the sport whereby family groups gain enjoyment through an unpressured participation in the outdoors. This leisurely venture in the form of a walk through the forest may serve as a "springboard" to other more competitive forms of orienteering. Each form of the sport provides a different physical challenge, whether it is the location, style of activity or time of year. The diversity within orienteering can present many physical options to novice participants as the following student comments suggest,

Elizabeth: Orienteering is for those who enjoy physical activity and challenge...a way of orienting oneself physically.

Christine: My orienteering experience was one of demands, in which I discovered my physical capabilities.

Sally: the next time I went into an activity like orienteering, I wouldn't give up on myself physically so soon and I would try and learn navigational skills really well.

Oliver: a solitary sport that involves running and using your mind at the same time.

Peter: It is important that we are doing physical activities of a nature that you might encourage someone else who doesn't usually do physical activity to become involved. Fitness is really important in later life.

These reflections suggest that each student was put in touch with his/her human self through physical learning. Knowledge of one's physical being

is vital. Jones et al. (1972) clearly supported this concept,

> The ability to move the body is one of the essential properties of human life. It is keystone to the ability of a person to adapt to physical conditions around him. Movement also has aesthetic value. There is a fascination and mystique in the manner in which a person moves (p. 8).

To move effectively incorporates an efficient functioning of all systems within each human being. It is the integration of mind and body that allows for a balanced totality of experience. Jack, with many years of orienteering experience, provided with these few key phrases his perceptions of orienteering that endorse the importance of human movement within an active lifestyle:

- moving with care yet finishing ahead of fast runners
- exhilaration/adrenalin
- strength
- fatigue and cramps
- dull felling of tired muscles after an event
- pleasant recovery of supped strength
- physical peaks and valleys, effort and exertion

Orienteering is an individual activity for those who are willing to test their bodies in vigorous physical exercise. In the film What Makes Them Run one competitor shared his thoughts of the independent spirit within each orienteer's mobility with these words, "orienteering is an activity that you do essentially alone and then you compare yourself with others later". Physical, mental and emotional investment in being human is realized through physical participation in the sport of orienteering.

CHAPTER 6: AWARENESS OF SELF: INDIVIDUALITY

Orienteering as an Individual Activity

> To be aware of life's complete wholeness all its movements, all it's mysteries, all it's hidden forces is to sense the wonder of motion. (Ellis Price 1983:11)

Each orienteer is a unique individual whose response to unknown navigational challenges reveals a unique personality and an awareness of self. In order to truly understand the essence of orienteering it is necessary to venture into a forested landscape to experience the spirit of this environmentally based activity (Bengstsson & Atkinson, 1977). Orienteering provides ample opportunity to experience being alone in nature and for the majority of orienteers this is a rewarding dimension to their existence. Nature, one's being and physical activity are orienteering as Holloway (1980) reflects in this comment,

> This spirit preaches comradeship with other people and with nature - desire to improve one's orienteering, ability, but not at all cost - a will to win, but to have fun as well. This orienteering philosophy could be one of life. (p. 5)

Although an orienteering encounter is experienced independently of others, it is at the same time a shared enterprise with those orienteers who are currently inhabiting the same forested landscape. Each individual participant, although mutually exclusive, is experiencing similar navigational incidents in close proximity to others. Yet, for each orienteer it is a unique and personal experience.

Cynthia shared her ideas about the individuality of a common experience within the context of her orienteering in the following manner,

> The principal value in this activity was that it had something for everyone: the adventurist, the individualist, the competitor, the quick thinker and the athlete. This meant that even though I wasn't competitive or athletic (usually essential qualities in sports), there were other aspects to orienteering, that I was able to enjoy, which are not usually found in other activities... Orienteering was a bit like an exercise I would do in school, except that, instead of paper and pencil, I had the outdoors, a map and myself. I didn't just write it down and hand it in; I went through the problem myself with me as part of it. I know I was right, not because I got a check mark, but I had learned the skills and completed the course.

In an endeavour to explain what orienteering meant to her Cynthia used an analogy of school. The impact of one single sentence provided a glimpse of how this sport expressed itself to this sixteen year old girl. "I went through the problem myself with me as part of it." Is she not saying that orienteering was a total experience for her? In other words, there would not have been any problem without her, thus the problem itself united her within the experience of orienteering. She was her own experience. John discussed his feelings of being self-aware in the following way,

> It really depends upon the individual. All my life I've been competitive and so I had to try my hardest...it's <u>trying</u>, <u>learning</u>, and gives you a <u>feeling of independence</u>. It confirmed what I knew about <u>myself</u>, I knew I could handle the pressure of <u>being alone</u>...that when I was alone, I <u>trusted myself</u> enough to do what I had to do and it was <u>fun</u>.

To capture John's personal meaning of orienteering, a few key words or phrases are extracted, "individual, competitive; trying; learning; feeling of independence; knew about myself; being alone; trusted myself

and it was fun!" In this way, John had revealed that he knew himself and this self knowledge was an important dimension of his successful orienteering experience. He realized that "being alone" did not deter him from completing the course and that the experience had been a rewarding endeavour.

Other student reactions were similarily reflected in terms of both an individual and personal experience as they described their orienteering participation:

Steve: I found it quite fun doing it on my own.

Walter: Being alone, it's much better, because you go at your own pace.

Jim: I got a lot more satisfaction completing the course individually...use your own skills.

Michael: It requires you to think straight and exert yourself with no assistance from others.

Ernie: I counted on all my skills to find myself through the woods.

Olivia: I like finding things...and thought it was a great challenge.

Celia: I had to think about where I was going.

Janet: You are allowed to go at your own pace, because you compete alone.

Joan: Doing it by myself was a good feeling...it was more challenging, because I did not know the area.

These students shared their understanding of the unique nature of orienteering from each of their personal perspectives. Their reflections although uniquely encountered were part of an experience that mutually involved them all. Orienteering was a personal venture to which all responded in their own way and in so doing discovered a dimension of themselves that may have been untested or dormant. A general reaction from the majority of the students was that they had been confronted, had

learnt and found worthwhile their participation in this outdoor activity.

Multi-Dimensional Quality of Participation

How does an individual encounter in the activity of orienteering speak to the novice participant in particular? How does this sporting experience begin to tell participants more about both the activity and themselves? Orienteering participation provide a three dimensional interaction that combines physical, intellectual and emotional capacities of an individual. The physical aspect of orienteering has been described elsewhere; it suffices to say that this dimension may be simply described as running ability over an ever changing diversity of terrain in the least amount of time in the completion of an event. And as Carlos described, "you go the way, you feel is quickest and best which will keep you oriented to suit your own needs."

Orienteering is aptly referred to as a "thinking sport". Thus in execution of navigational decisions, novice participants must utilize effective intellectual capabilities in liaison with physical processes. It is this harmonized coupling that is responsible for successful completion of an orienteering event.

Intellectual Encounter: Making Decisions

Another perspective of an orienteering endeavour is effective use of mental capabilities that allow learning and implementation of specialized techniques conducive to successful course completion. Implicit in sound navigational skill is the ability to make decisions about route selection in conjunction with map reading and accurate observation of the immediate surroundings. This aspect of the experience may never be divorced from the physical domain. Many times there are navigational situations experienced by novice participants whereby the legs are ready to run down

the nearest and most obvious trail but the mind is engaged in contemplation of a more direct route through trees. Powers of reasoning are momentarily suspended and a temporary paralysis of the body is experienced, one is "rooted to the spot" and unable to determine the best route selection at that moment in time. A response is imperative to resolve the navigational dilemma. Sometimes, decisions to resolve the situation are difficult for novice orienteers.

Cynthia and John shared their thoughts in experiencing a sense of accomplishment. John explained,

> If you don't do it on your own, you don't get a feeling of accomplishment...everything that matters is your decision.

Cynthia endorsed this sentiment by saying,

> It was a good feeling to be out there relying entirely on myself and on my own abilities...it was a chance to use everything I knew, noticed or could figure and, apply to my situation: not knowing exactly where I was or where I needed to go, but seeing it on the map and using that to try and find my way...it was very rewarding when I had a accomplished what I had set out to do.

With these reflections a basis for fundamental decision making ability is being established. To use newly acquired skills (navigational techniques in this case) may result in a feeling of satisfaction for the novice orienteer. Each individual student was capable of making decisions. John endorsed this concept with the following comment,

> It makes you think...it gives you self confidence, if you can do it. It can be fun, if you want it to be.

John suggested that orienteers have to be initiators, things do not just happen, and learning basic skills is imperative before attempting to be successful navigators.

As they shared their thoughts, each from an individual perspective, classmates supported the reflections of Cynthia and John:

Peter: I think, I learned that I need to trust myself more...and be able to take that risk in deciding this is where I am...that is probably important, because I tend to check my facts too often and it's not necessary.

Barry: The necessity for a decision...you have to be able to stick to your position...you can't change in mid-course. You realize that you have to make a decision, so you do it because there is a need. I had to decide which route was quickest.

Carlos: It's more of a challenge on your own...you have to think about it and know for sure...you are sort of controlling how its going...if I really applied myself, I could accomplish more than I thought...it paid off.

Peter was saying what he learned about himself in his experience of orienteering related to his ability to make decisions that demanded confidence, trust and risk. He found that decisions were sometimes difficult to accept in an unknown environment. Barry was more decisive and suggested that once a course of action has been resolved then there should not be deviation. This philosophy reflects the confidence of youth. Carlos enjoyed the challenge in which thought followed by appropriate action was taken independently of others. He was aware that he was in charge of his own destiny so far as his navigational decision making in orienteering was concerned.

The girls expressed similar sentiments to their male counterparts when they shared their thoughts concerning their ability to make appropriate navigational decisions. As Sally conceded,

> Although I managed to get lost the first time, now I feel that I really understand and have a good feeling for the basic skills by the end of the course.

New experiences enlist untested potential in response to such situations and Sally was able to overcome her initial setback. Edith endorsed the idea that self reliance is necessary when she said,

> It's an independent sport. You don't depend on anyone else to get you where you are going, its your own thing.

Elizabeth and Caroline develop this same theme of self reliance.

Elizabeth: You are doing something for the first time and you may not be quite sure of yourself or your orienteering skills and that makes a big difference it's trusting myself, going for it, go ahead and do it...its not going to do any harm and it may teach you something about yourself.

Caroline: Orienteering tests your skills...maybe, you are with a group, but you still rely on yourself. It was different, because its outdoors...all those places I had never been to before and it was a new activity that we were doing...after the Lighthouse Park [event] it gives you confidence, so you don't really need to rely on other people. I think that it really helps to know, I can do it myself.

With these sensitive comments Elizabeth and Caroline clearly revealed their understanding of the individual role played by each in experiencing orienteering for the first time.

The following description allowed Christine to describe the sequence of events that permitted her to be thoughtfully involved in her own navigational endeavours,

> The whole idea is to pace yourself according to your own ability. I felt a great independence, it was a feeling of now I'm out here, I'd better get myself organized! It all depends very much on yourself and I found myself in solitary despair, when not being able to locate a control or being unsure of a turn off. These experiences helped me build up my confidence, when finally locating that missing control. My satisfaction of finding each control was obvious. It was like passing another milestone. It was a rewarding experience in which I felt I have learned more about myself...another aspect I enjoyed in orienteering was that its set for the individual goal.

This powerful statement epitomizes the multi-dimensional quality of an orienteering experience. Christine realized her own navigational potentiality through a sensitive understanding of herself.

Aesthetic Domain: Emotional/Spiritual Being

> this world of nature has become a servant to my needs in life a rich companion to all my moods a minister to my love of beauty, peace and solitude.(Ellis Price, 1983:71)

The aesthetic domain as the third dimension of self represents reflection of past navigational experiences through which a small part of each student was revealed. Van den Berg (1975) suggested that when a special occurrence happens in one's life and it is experienced deeply, it is only later that it emerges from one's inner being to the outer world.

In orienteering, particularly at the novice level, a time to pause, look, appreciate and be moved to expression in a natural forested landscape should be encouraged. Personal impact is made more powerful by the generation of responsive feelings. The students made indirect reference to a more personal domain of themselves.

Bruce, a tall, slim, sensitive boy, and uncoordinated individual, who did not enjoy his physical education classes shared the following observation,

> Our orienteering experience reminds me of pure hiking. I tend to enjoy the scenery and ignore the competition. The forest gives off an aura of solitude and peacefulness.

With these remarks, Bruce suggested that although orienteering was an intense physical activity, his appreciation of the quality of his forest experience was more important to him that his commitment to the class competition.

Peter expressed his feelings about a wooded landscape with these words,

> I guess, I found that I have a feeling for the woods. I think, I probably felt that before, but maybe it was reinforced in orienteering.

Although he does not describe the feeling, Peter gave a sense that he was sensitive to the impact of being in a forested environment. It seems appropriate to interject here with an analogy which makes a distinction that a grove of tall trees may be viewed as being similar to a cathedral.

> The forest can resemble the inside of a great Gothic cathedral, with trees reaching to the sky; filtering and colouring the light that falls on the bracken floor of the nave. (Disley, 1978)

It can never be the same structural fabric as bricks or concrete, but one may sense reverence and spiritual uplift in either setting. Barry may be indicating a comparable impression, when he said,

> Orienteering in the woods is much different than other sports, as it is staged differently.

In this reflection Barry made reference to the setting itself and to his feelings about the sport. Both dimensions would appear to be interrelated with the participant as an integral part of a two-way relationship of an orienteering experience that occurs in a natural outdoor setting.

Cynthia added her thoughts about this intangible yet vital part of an orienteering experience, when she said, "it was in part the area that was different, but also the experience." The students had been orienteering in the forest adjacent to their school until the final cross-country event at Lighthouse Park. Cynthia wondered whether it was the change of forested environment that made a difference to her encounter in the outdoors or was it experience of orienteering?

There was a coming together of physical, intellectual and aesthetical (emotional/spiritual) domains within an orienteering

experience for these students. Christine described her experience by suggesting that orienteering "was a whole different experience, but I don't think I ever related it to me being there." Christine, in her reflection, realized that her recent orienteering experience occurred in a different location (from the locality close to school referred to earlier). However, she seemed to be indicating that at the time she did not fully appreciate herself as being part of her encounter there. It was only afterwards that she wondered whether this lack of realization at the time had detracted from her actual orienteering experience. Her memory of her feelings indicated that she was indeed there as the centre her own experience.

Caroline endeavoured to describe her orienteering experience in terms of her own reality,

> It was obvious when I was orienteering, I was not aware of how I felt. It was only after and then, you see all the things that already went on in your mind, when you were orienteering, like, all the things that you felt.

The experiencing of a situation may only be reflected upon after it has occurred, and not during an actual event. At the time, there is total involvement in orienteering participation. The ability by the students to recall the event suggested that their experience was real and subsequent feelings were credible.

The orienteering experience provides an opportunity to pause, reflect, and look a second time at the world. Thus as the English landscape artist Constable once said, "we only truly see what we understand", so aesthetic appreciation of nature will grow from direct contact with the environment (Palmer, 1976:85). To be emotionally and spiritually involved as physical participation occurs in a sport, such as orienteering, is to provide an outlet for inner feelings. A total

experience implicates all dimensions of human personality and this is no less valid in any natural outdoor setting. Orienteering as an individual pursuit allows an encountering of the totality of self within the experience regardless of navigational ability. The students at their novice level of participation, were more involved in their doing of orienteering which resulted in their feelings of self being less prominent. Whereas the experienced are more aware, as Judy vividly portrayed the emotional impact of her orienteering experience in the following description,

> Emotions do play their part: stern concentration at the start, which route would be best...elation when the flag is sighted, frustration if it is missed, dismay when I slip crossing a stream and the water is cold, annoyance when I have to cross a barbed wire fence and my clothes get tangled - the seconds are ticking away, satisfaction and relief when the finish line is crossed and map handed in, then self-doubt where will I be in the placings - how have others done and the wait for results seems interminable.

Pat, another long time orienteer described her experiences that replicated those of Judy,

> Emotional feelings are part of the sport: joy at finding a control, dejection when the flag isn't there, excitement when all is going well, weary when the route choice was bad, despondent if you wanted to do very well, but did poorly.

Each of these moments is generally experienced alone, yet part of a common occurrence shared by all orienteers as evidenced by reading both descriptions. Without these feelings the emotional encounter between an orienteer and his/her immediate surroundings could not make any definite impact upon the total orienteering endeavour. These instances momentarily reveal part of one's inner self and provide validity and commitment to navigational problem solving endeavour. The release of emotional energy occurs in these fleeting moments of lived experience

because recall would be difficult without the impact of these feelings being part of the encounter. Reflection is an integral part of learning.

Ross, a member of the national team provided his perspective about the emotional dimension of the orienteering experience,

> Most of my orienteering involves stretches of total concentration interspersed with more easily identifiable emotions: a feeling of excitement or satisfaction as I complete 3 or 4 legs in sequence perfectly, or suddenly, I may feel frustration or anger when I realize I've made a mistake or I experience an unrelated emotion, a feeling of exhileration when I suddenly see a good view. Another is fright on the occasion when I have seen a bear.

Ross continued by endeavouring to describe what he felt was happening. He does not negate the presence of emotional feelings, however, he does describe how he rectified a temporary loss of concentration in order continue his navigational pursuits,

> Being unrelated to orienteering these types of feelings are always quite sudden. These lapses in concentration are of course frustrating. If I feel my mind beginning to wander, I will force myself to concentrate by pulling my map right up to my face, inches away from my eyes and study the detail, looking ahead anticipating and picturing the map in my hand.

The same emotions were revealed as part of his participation, but appeared to be experienced at a different level of intensity. For Ross these unexpected feelings seemed to interrupt his powers of concentration. He will not allow these momentary lapses to be a deterrent to efficient implementation of his high level of technical skill in competition.

Emotions allow for "stock-taking", after which a particular situation can be reviewed, whether it is a sigh of pleasure at a breath-taking sight or annoyance at making a navigational error.

Orienteering is an emotional experience for all sensitive human beings. Reflection upon navigational endeavours is important to emotional development for students as novice participants as well as for experienced orienteers. As the student reactions suggest, there were few opportunities to experience natural outdoor settings during the course of a regular school day other than in physical education classes. The environmental impact of nature may not be a conscious dimension of daily experience. This deprivation may not allow any release of emotions that would be either readily accepted or recognized. For example, being affected by the sight of a small wild flower growing between bricks of an old building. How many would notice and enjoy or alternatively avoid any visible show of emotion? In orienteering, emotional release is an integral part of the encounter. Joy is experienced while traveling through a forested environment, when orienteers become more sensitive and attuned to themselves and a surrounding landscape. This interaction contributes meaning to the orienteering enterprise and increases a sensitivity to self as being part of nature. Recognition that the students were beginning to understand the concept of an intricate patterning of all natural things forming an interlocking entirety was endorsed by Storer (1956) who stated that, "web of life is how all living things fit together into a single pattern" (p. 10). Appreciation that they were an integral part of the natural world about them was reinforced through their orienteering experience.

Santayana (1955) suggested there is no duality between omnipotence and creation,

> In the contemplation of beauty, our faculties of perception have the same perfection: it is indeed from the experience of beauty and happiness, from the occasional harmony between our nature and

> environment, that we draw our conception of divine life. (p. 8)

As sensitivity to nature deepens, so does reverence for quality of life. In orienteering encounters there are fleeting moments where one is embraced by one's own spirituality. Beauty may be regarded as part of this and when describing beauty Santayana (1955) pointed out,

> Beauty is pleasure regarded as the quality of a thing. Beauty is a value, it is not a perception, that is...it is an emotion, an affection of our volitional and appreciative nature. (p. 31)

The students, as novice orienteers, sensed more than the physical dimension of their orienteering encounter and considered their feelings to be an integral part of their total experience.

Being Alone: Awareness of Others

Orienteering is an individual sport and thus to experience "aloneness" in the midst of a forested environment where visibility is limited and distance separates one orienteer from another is part of the activity. Orienteering for the first time may be a traumatic experience, especially for team sport oriented sixteen year olds. Even though these young people were becoming more familiar with individual outdoor pursuits and lifetime sports, an initial experience of going "solo" in orienteering can be unnerving, whether it is fear of the unknown or a lack of confidence,

> At first glance orienteering did not seem to be very much...just running through the woods looking for controls.

With these words, Barry shared his first impressions of the sport of orienteering, as viewed on a film. However, after some practical experience he provided a more specific description of his personal experience of being alone,

> But, when I went out orienteering with just a compass to guide myself, then I realized that it was

> a lot more than just running in the woods... When you go out, you go by yourself. You feel more free and more troubled, because only rarely do you come into contact with others.

There appears to be a dichotomy of feelings. Barry experienced partial freedom in a "being alone" situation, yet still needed security of others as reinforcement for his ability in navigational decisions.

Being alone as encountered by this group of students was either a positive or negative experience. Although, sometimes an individual felt both during his/her navigational endeavours. Steve revealed why he enjoyed being by himself when he said,

> I enjoyed orienteering by myself, because you don't feel as though you are being pushed to go the same speed as anyone else. If you go by yourself, you can go the way you want to and at your own pace.

This meant a great deal to Steve, because although he was physically strong and athletically inclined, he was not able to travel at any great speed. He appreciated the individuality of the sport and did not feel undue pressure from others because he was able to go at his own individual rate of travel. Oliver shared a similar sentiment to that of Steve, when he said,

> Being alone...it's a sport when you don't have to worry about teams, there is just you...all the motivation has to be from yourself.

Oliver eptitomized his individuality with this statement. He appeared to be resourceful and self reliant individual who made decisions with confidence and enjoyed accepting a challenge, in this case, a physical encounter of negotiating dense vegetation rather than using the trail system.

John endeavoured to describe his feelings about being alone in this way,

> If you are totally isolated and you are all alone, then there is no one to help you. If you get into

> trouble and do something wrong, then you have to do it and get out of it yourself.

John was suggesting that a sense of responsibility concerning action taken needed to be developed because each individual is alone while orienteering. Acknowledgement of the challenge of route selection when entirely alone and under time pressure of the event becomes an individual endeavour.

Carlos endorsed this notion of endeavouring not to make unnecessary mistakes by suggesting that thoughtful decision making is of vital importance,

> It's more of a challenge on your own...you have to think about it and know for sure, otherwise you would go the wrong way...you are sort of controlling how it's going.

The idea of controlling what is going on, in a sense, is a personal decision made in the context of route selection, bearing in mind that no one can constrain the ever changing conditions of immediate surroundings, because the spontaneity of nature always provides unexpected challenges.

The girls shared their feelings of being alone, as Cynthia recalled,

> Well, it felt really good just being on your own and everything, it was a different feeling... I was conscious that I was making the decisions.

Cynthia suggested here that unless one is alone, then one may never have an opportunity to experience making an independent decision. Thus being alone in a forested setting provided her a chance to rely upon her own navigational judgement. She continued by saying,

> It depends on how each person reacts to a particular situation or experience...the one thing for you as you're going along, is that there are people before you and behind you. But for every person it is going to be different. Every person that passes a control is going to have different feelings and that's really nice, you know that each person is doing it in their own way. Orienteering has a

> different feeling and meaning for each person and that is nice to know.

Cynthia, in describing a "being alone" feeling, reflected that it was a positive experience. She saw herself in relation to others and suggested that each individual will have different encounters of self and setting during an orienteering event. Cynthia felt this was a unique dimension of this sport. Andresen (1977) supported Cynthia, when he said, "Orienteering creates many different sensations in an individual." (p. 4) It is the realization of these feelings within an orienteering experience to which Cynthia is referring.

A real sense of success was experienced by Sally as she described her feelings with these words,

> I was very proud of myself today, because this was the first time that I've been able to find my way alone... I knew I could enjoy it, if I put that little bit extra effort in...maybe, it was just my attitude and not nervousness.

Sally in attempting to describe her success in the Lighthouse Park event, attributed it to her sensibility and the way in which she approached the navigational challenges of the event by recognizing her own personal qualities. Holloway (1980) confirmed Sally's thoughts when he said,

> One of the most important factors running through the sport of orienteering is your attitude. If your attitude is positive then you are halfway to success. (p. 14)

Elizabeth further endorsed the concept of self reliance by saying, "Being alone, you have to rely on yourself, only yourself." She then continued to describe what the experience of being alone meant to her,

> I felt that I had to trust my own instincts and did not necessarily go by what I saw other people doing. It taught me some things about myself that are important, when I am doing challenging things such as orienteering. First of all, it taught me to trust my own instincts and not to go along with others, if I didn't think they were right and then it made me realize that people do things at

> different paces, so if one person is slower than another, it doesn't matter, so long as you are doing your best.

Elizabeth expressed her "self" experiences of being alone, with sensitive awareness of herself; that is, she is an individual capable of making navigational decisions independent of others and able to go at her own rate of travel.

Christine suggested that a "being alone" experience could be equally well described as,

> A challenge within yourself...it was a really good feeling being able to find them [control flags] by yourself.

and then she provided deeper elaboration as she conceded that,

> It's an internal fight within yourself to succeed. Actually, I really felt terrible when I had to follow someone, then its not me... I really felt bad.

Most of the girls shared positive incidents of the aloneness within their individual orienteering encounter. Pat, an experienced orienteer shared her thoughts of the benefits of this important dimension of the sport as being,

> Self satisfied feeling of doing a tough task (physical/mental) well...pride in physical strength and stamina, the re-creative feeling which comes from long periods alone in the woods.

It is the recognition of feelings in reaction to the total orienteering experience, that allows for valid interaction with a natural outdoor environment. However, through this encounter the students learned about themselves more distinctly as individuals and without exception, the aesthetic dimension of orienteering is a contributory factor to the experience itself. There is a need to feel inside in order to truly experience the external world, in this case a natural outdoor setting in the context of an orienteering event.

Self Doubts: Fear of Unknown

Orienteering encounters, as with most personal and individual endeavours, are dependent upon personal response to particular situations. In orienteering, even at the novice level of participation, it is technical knowledge, level of confidence and acceptance of personal judgement in navigational decisions that provide a basis for successful involvement in the sport. Learning from making errors and in so doing becoming more aware of one's personal capabilities as a navigator through unknown outdoor environments is a growth process.

In orienteering an ability is developed to participate against the clock (and sometimes against one's self) as each orienteer is drawn into controlled confrontation with nature. Constructive questioning of recent experience is essential during a post-mortem session in contemplation with others and a map. Reflection allows recent experience to be relived. A drawing from the past is counter-balanced with the present and then projected towards the future. This is an ongoing process both during and after every event. It is the basis on which learning and growth occur, particularly in the context of orienteering.

However, fear of failure is always present and negative feelings may detract from navigational endeavours. Sometimes attention is drawn towards others and it is their reaction to one's performance that makes an impact. It is indeed fortunate that the sport of orienteering demands individual participation before comparison with others. The essence of this activity suggests that each individual can sense how he/she has done before receiving any external source of information. Yet for novice orienteers this is a difficult concept to accept, as their previous sporting endeavours have probably reinforced the opposite point of view.

Within their limited realm of orienteering experience the students were confronted by their own self doubts on numerous occasions. Each described his/her feelings and endeavoured to provide a basis for his/her reactions.

John: I was in a place totally new to me and this made me feel a little nervous, but when it was my turn to go, the nervousness passed away... It was a long time, I got panicky a little because you say, 'where is it or where am I?'...so I found it! Once you find it (control flag) you're alright...it's a nice feeling of elation.

John expressed his lack of confidence at the start of the event in Lighthouse Park. A natural reaction experienced by all orienteers at the start of any competition.

Barry: I think, I probably would try to be more sure of myself. I lost a couple of minutes off my time to walking, checking and double checking my map, even though I was going the right way.

Barry questioned himself in a similar way to John in his reflection suggesting that it was helpful to maintain a tension between uncertainty and security.

Peter: I tend to be really unsure of myself...I will make sure that I know where I started off from next time ... I think that with a compass, I felt much more secure.

Peter recommended that there was a need to know where one was on the map at the beginning of an event, and that efficient use of both map and compass would inspire greater confidence in one's own ability.

Carlos: It would have taken a lot longer, because you would be unsure, if you were on the right trail and you would be more careful not to make a mistake.

Carlos, the eventual event winner, also expressed some uncertainty about individual participation and suggested that care should be taken in all navigational decisions. This comment came in response to a brief discussion on completing an orienteering event entirely alone and not

seeing anyone else throughout the duration of a course, a time period of less than an hour at the novice level of orienteering.

The girls expressed similar self doubts as they endeavoured to realize their own felt potential.

Elizabeth: You have to be quite sure of yourself and believe that you in fact can do it, because if you doubt yourself and your capabilities, then you run into problems.

Elizabeth described her feelings at Lighthouse Park,

> I found that I didn't really want to start off, but it was nice out, so I guess that helped me in getting back...one part I really remember was at the very beginning, and going the wrong way. I couldn't figure out the path...it made a difference to the way I was feeling because when I first started out. I thought "oh great! I'm ready to go, this shouldn't be all that hard"...then now, what I am going to do?

These good moments were generally integrated with the times of uncertainty. Sally expressed her feelings of self doubt in this way,

> Notions of how the course was going to be, interfered a lot at the beginning, so when you really got the feeling for the course, it was better... I'm willing to admit to myself now that I am easily intimated by unknown situations, then it might have been easier to rise to the challenge.

Caroline shared her feelings about her orienteering ability,

> I think at the beginning, I was a little bit doubtful of my own skills and whether or not I could complete the course, then I knew by the end, if I had completed it, I would feel good... I did wonder whether I was going to finish or if I would miss any controls...although the main thing in my mind was, when I am going to get the next one, that was the most important thing.

Later, upon reflection, Caroline commented,

> I think when you are orienteering in a place that you have been to before, it is not so challenging, because you have some idea of the landmarks, but when we went to Lighthouse Park, I had never been there before, so I didn't know what to expect...then

> what really scared me was the fact that I was the first to go off.

Caroline was provided with the doubtful privilege of being the first participant to leave the start area. She truly experienced being alone in the forest, although she knew others would be coming along behind her and that knowledge helped her to keep going to meet the unknown navigational challenges of the orienteering course.

Oliver viewed self doubt in a more positive way, when he said,

> I really doubted that I couldn't do it, because I didn't think the course would be that hard and even if it was, I was sure that I could trudge through it, because I was pretty confident.

Each individual responds to a challenge, in this case, physical navigation of the outdoor landscape, in an unique way and is equipped to handle the challenge in a special way. "Feeling right" is important to performance. Thornley (1982) suggested that there are five main factors that contribute towards one being able to develop a positive attitude. He described each as follows: motivation is the driving force which controls behaviour; confidence is in an ability to succeed; aggression is determination to achieve a goal; positive attitude is a good self image and finally, nervous tension needs to be at the correct level for each individual. All these dimensions of the human personality are contributing factors to an experience of orienteering at every level of navigational expertise. George, an experienced orienteer shared what he has experienced in orienteering from several years of competitive participation,

> Orienteering is testing yourself to the limit and being successful and key words for me are as follows: fun, knowledge, challenge, accomplishment, skill, stimulation, thrill, perfection, fear, failure, friendship, sharing, importance, education, SPIKE! [locating control].

To experience the heightened awareness of self as reflected in the individuality of each orienteer during an orienteering event is to appreciate the multi-dimensional qualities demanded by orienteering. The nature of the sport is the experience of being alone and away from others in a forested setting, whereby emotions are consciously present and interactive with both the intellectual and physical domains of being human. Decisions are made as feelings of self doubt are experienced. Reflection of past experience provides a basis for learning and anticipation of unknown environmental encounters challenge each orienteer into future participation.

CHAPTER 7: COMPETITION WITHIN PARTICIPATION

Living and the Sport Experience

"Survival of the fittest" is a familiar maxim and its message is relevant today as we approach the twenty-first century. Lifestyles, settings and contexts are diversely different from when this saying was originally instituted, however its meaning still provides an impact. Competition is present throughout life's experiences underscoring interaction with others and in preservation of self in discovering the many dimensions of human personality. Comparing self with others is a vital part of living. This challenge is needed in life because without looking beyond others one's potential would not be fully realized. This incentive is required whether from external sources or from within to truly experience self in every way. Each individual is unique with a different sense of competition and its comparative relevance in a particular life-style, and the worth of competitive influence ever present as an integral part of human nature.

In the context of orienteering, competition is undeniably present, as in most sports. However, this competitive dimension of participation does not take any overt form in orienteering because the underlying and distinctive quality of the activity is that each individual experiences his/her physical endeavour prior to knowledge of another's performance. Comparisons are made later. The structure of an orienteering event assists in fostering this philosophy, with start time intervals of several minutes providing a time barrier between participants. There is

spatial separation whereby visibility of others is limited during the competion; thus, orienteering is truly an individual enterprise.

The quality of competition in the orienteering endeavour is recognized by the fact that all participants run a specific course level that is representive of their experience, gender and age. The competitive element is definitely present but it is experienced personally. Self competition is a vital dimension of orienteering.

Henley (1976) suggested that to be competitive in orienteering is to realize one's true potential regardless of all external factors.

> The aim is for all competitors to enjoy the course while pitting their wits against... (p. 9)

This quote has been deliberately left as incomplete, because the challenge of a competitive experience is uniquely personal to each orienteer.

John, known for his competitive inclinations, described his experience in this way,

> In this event, it was sometimes good to have competition and sometimes bad, because when I couldn't find it (control flag), I started getting panicky and you just can't think. When I finally started going well again, it helped because I went faster.

On another occasion, John elaborated as he continued,

> If you have to ask someone, then it takes the fun out of doing it yourself. If you do...basically you're cheating. But it depends on who you are and what you think...so for me, it would take away from the experience of orienteering.

John, as a novice orienteer, took pride in the sense of accomplishment that he experienced as a result of his independent competition. He mentioned "cheating" in this passage. It is permissible for an orienteer to ask where one is if disoriented, but not to ask for the location of the control flag. John was a "self-aware" individual and therefore took

the idea of his individuality very seriously. John was determined to do his best while being solely reliant upon his own navigational skills and decision making ability.

Cynthia expressed a very definite opinion about competitive sport. She said that competition was an integral element of every sport and felt that she really did not want to experience that sense of pressure in orienteering. She described what she meant by this sentiment in the following way,

> Well, I won't say that it's really a sport, I'd say it's more of an I don't know why, maybe sport just sort of turns me off.

Cynthia admitted she did not have a competitive nature, but enjoyed her participation as an individual during the orienteering unit. At this juncture in her orienteering experience it may not have been clear that this outdoor pursuit is both a highly elite competitive sport as well as a family oriented recreational activity and that all participants have the option of travelling at their own pace.

Caroline endeavoured to describe her feelings about the competitive "edge" of orienteering,

> I knew it was a competition, but I thought, I am not really going to treat it like a competition... completing it (event) was the important thing.

She provided some clarification with these words,

> It's different...I wasn't really competing with anyone else, but more like with myself to see if I could manage on my own... You have to set goals that you want to reach.

Christine endorsed Caroline's sentiments,

> It's a competition to yourself and no one else, more of an individual thing...you rely on nobody, but yourself for the results.

Christine suggested that a dimension of competition was acceptance of the consequences of one's actions. Sometimes people are in situations where they have to rely on themselves, in this case, testing their navigational skills in order to complete an orienteering course set out in an unknown forested park.

With the following comment Elizabeth shared her understanding of the individual nature of orienteering and reinforced Cynthia's sentiments,

> Orienteering can be competitive or non-competitive... it is a good sport for people who like to work alone, enjoy physical activity and challenge.

However, Elizabeth revealed her strong feelings about one aspect of competition that she did not enjoy.

> I just hate running in P.E...it's sort of a sense of competition who gets there first and who dies along the way. I just don't like that kind of competitiveness...I didn't really like the fact that we were all rated, but I didn't mind where I was on the list, because I did what I could and that was fine.

Elizabeth revealed her maturity by establishing a basis for a sound philosophy of life. She was satisfied that she had done her best. Although she queried the value of the result sheet, she did appreciate the necessity of the list. Elizabeth had expressed an intrinsic knowledge and acceptance of her own self worth in relation to others.

Bob, an experienced orienteer provided some additional information when he stated that,

> You accept everything and reject nothing...the terrain is there, for your senses, to be absorbed. Orienteering's intensity heightens this awareness, if the mindset is right. Then the contest is put in perspective and a relationship between orienteering, the contest, the terrain and the nature of human beings is established.

Bob described the competitive element of the orienteering encounter in its broad context, by suggesting that there are several interlocking dimensions which are held in tension by each individual participant during a competitive experience. It was interesting that novice orienteers suggested that despite the individual nature of orienteering, they experienced simultaneously indirect pressure from others and the potential fear of failure which felt intimidating.

Peter described his orienteering experience by saying,

> It was more competitive, because you had to think ahead, but I really didn't understand it and I've never been very good at mapping, so that's why for me it was more difficult.

His technical knowledge appeared to have affected his level of confidence and thus undermined his potential for competitive success. However, Peter was accepting of his navigational ability and his situation.

Barry endeavoured to describe what he felt to be the competitive dimension of orienteering,

> What is orienteering seems rather intangible to me, as I can't quite put my finger on it. What I think it is-is the basic essence of competition, when you have a set course to follow, as in running, but you don't get the same feeling of being in transit, because you focus all of your concentration into doing it [completing the course].

Barry's term "being in transit" provided an appropriate metaphor for running. In orienteering, he suggested that it was necessary to concentrate all the time and thus orienteers experience themselves being in constant communication with their surroundings, thus combining both physical and mental challenges inherent in successful course completion.

Carlos took a positive approach towards competitiveness within orienteering, by saying,

> I just knew I was more together than other people... it's not that much harder, you have to pay more

> attention to what you are doing...it takes a lot of practice to get good...I just wanted to do well and prove to myself that I can do this by running fast...and then sure enough I found out my time.

Carlos, the event winner, was deserving of his success that revealed a self confidence in his developing navigational ability. He shared his reactions,

> Beating Ben by thirteen seconds was quite fascinating, because you don't really know other people's times until the very end...it's really neat, because you don't know who was going to come in first.

Carlos' description reinforced the point established earlier that in competitive orienteering participation is first followed by comparison with others. Orienteers fulfill personal competitive expectations during the course before they turn to see how others have done. Each orienteer has an opportunity to foster a personal competitive spirit that fulfills competitive needs of the individual.

Bengtsson and Atkinson (1977) upheld this concept as they suggested that,

> Competition is another factor. There can be a little bit or a lot -- depending on the individual -- in all of us; sometimes we just want to know how stack up against our peers alone in the woods with a map and compass and working against time. Running in meets gives all this opportunity, if they want it. (p. 191)

Lee and Gilchrist (1984) provided a summary statement,

> Competitive orienteering requires endurance, intelligence and both physical and mental toughness to meet the demands it places on the competitor. As a competitive sport, it is truly adventure running. Hills, forests, marshes distances and challenging navigational problems all combine to test the toughness, the physical fitness and the decision making abilities of the competitive orienteer. (p. 2)

Thus, at whatever level of navigational experience in orienteering there is the reality of competition. The students participating in their

first cross-event at Lighthouse Park began to recognize their own competitive nature as part of the total orienteering encounter.

Concentration Provides Competitive Edge

> Orienteering is a competitive sport...the main skills are concentration, three dimensional thinking and off road running. (Ellis, 1983:3)

As novice orienteers the students had not yet developed sufficient confidence in their navigational ability that would result through more competitive experience over a greater time period. They enjoyed success at their level of participation, but if they were to realize their full potential it would be necessary for them to become totally absorbed and move towards the deeper level of concentration that enables sound navigational decisions to be made even while running rapidly through an unknown forested environment. To appreciate the importance of concentration as a dynamic attribute to any orienteering experience, Ross, member of the national team, shared his thoughts in the following way,

> As an elite orienteer I have found that my best results (time and/or placing) have come in races in which I had been concentrating so hard that I wasn't even aware I was doing so. A good analogy is sleep. When one is sleeping, the thought that one is sleeping does not occur. That thought really only comes after waking. I have only had such a deep level of concentration in a few full races. In these cases, it is difficult in hindsight to describe accurately what the experience felt like at the time, simply because I have no clear recollection of it, I was concentrating so hard! If I had thought about it at the time, then by definition, I wouldn't have been doing it. That is, the minute I say to myself 'I'm concentrating' I've just then stopped concentrating that well.

This powerful description speaks for itself. Ross continued to describe his orienteering experience,

> A strange situation exists in that I really enjoy the sport more, when I am not concentrating, than when I am. For example, if my concentration is so good that I am not aware of it until after I finish, then the enjoyment really only comes after the fact. All the potential pleasurable emotions are excluded during the orienteering to allow for total concentration! On the other hand, if I'm feeling all sorts of pleasurable emotions while orienteering, I will enjoy the sport more, even though I know I would orienteer better if I concentrated more.

It would be interesting to determine if Ross could have excluded all emotions during these intense periods of concentration. He only mentioned the pleasurable ones. Although not aware (he does not report it) he must feel himself "talking" to his map. This dialogue between self and map appears to be a common occurrence with orienteers as navigational decisions to assist with their travel are made. Csikszentmihalyi (1975) stated that the centering of attention on a limited stimulus field suggested total concentration. This supported Ross' reflections that, in order to participate at a very high level of competition one needs the ability to focus entirely on navigational decisions while travelling at speed over an unknown course.

Although some orienteers appear to find the ability to concentrate easier than others, concentration is a skill that can be learned with practice. Thornley (1982) suggested that there are two levels of concentration in orienteering. Firstly, one needs a basic level of concentration throughout the course so that technical skills can be successfully applied to solve navigational problems. Secondly, one requires increased concentration when approaching a control location so that one is not deterred from an intended "plan of campaign" by outside distractions, whether they be external in the form of other competitors or internal such as contemplating an alternative navigational option. In these circumstances, it is not surprising that novice orienteers

experience some initial difficulty in focusing attention on their map and surroundings. They appear to be readily distracted by other orienteers and the pressure by encountered physical presence of other participants before making their own navigational decisions. John certainly admitted that the presence of others near a control location caused him difficulty. There is a dichotomy between the need for security and the cause of distraction from our original navigational decision that reflects uncertainty and questioning as experienced by every novice orienteer. John shared his thoughts in this comment,

> I knew I was in the right place, but when you are looking for it [control flag], I would be always looking over to see if anyone else had found it. If they weren't there, I probably could have found it quicker.

The following remarks revealed what concentration meant to Cynthia in relationship to her orienteering experience,

> Not being attentive and not understanding where you are and what is around you or knowing how to get back to where you wanted to be is not helpful, because to do well, you must be able to read your map.

Cynthia continued by sharing her approach towards intelligent navigation with these words,

> It was easy to see the logical places to put the controls or just to to myself I should be coming to the control around now and there it would be!

Cynthia shared an interesting "search" approach,

> You could also find them [controls] easier by the fact that there was something to look for and if you don't find it, you were going to be lost and you wouldn't want that!

Although it is rewarding to locate controls in sequence along a course, Cynthia has yet to fully appreciate that orienteering was <u>not</u> a "treasure hunt," whereby the game was to run about the forest in search of orange

and white flags. It is skill in navigation reflected in route selection between these control flags that is the true experience of orienteering.

Elizabeth, in all seriousness, revealed what helped her concentration, when she said,

> I was thinking of where you might put the controls... I think it helps, if you know the person who has set out the course!

This idea had never occurred to me until Elizabeth's remark. It is to some extent a valid comment but one that I have never seriously considered before. Elizabeth contributed another observation concerning her concentration pattern,

> I think what I was doing was concentrating more at each control rather than wondering whether I was going to finish... I was thinking of each control, but not really past the control I was heading for.

She sensibly took one section of the course at a time focusing her attention on locating that particular control. As she gains navigational experience she will be able to develop a mental map that will allow her to think ahead past each control. Cynthia provided a practical suggestion to enhance concentration by saying,

> I think that you really have to be calm and you have to think without having to worry. You shouldn't make yourself worried, as then you won't make the right decisions.

She continued with a descriptive example,

> When I was at the first control [flag], I thought, here's an easy decision I could just take the main trail, and then there's a harder choice, to take the less obvious one. In a way, I was tempted to take the less obvious one, I don't know why. I guess I thought, if it works out and if it was the right trail, then I would feel that I would know before I turned to go back...it turned out to be the right trail!

Maybe this navigational decision was made by feeling a sense of direction, rather than map reading skill which would have been

preferable. However, Caroline had the courage of her convictions and made a correct route choice to the second control flag.

Sally supplied some practical advice that would enhance Caroline's instinctive response by saying that,

> I found that by keeping myself organized and never letting my mind relax, I was able to keep on course...finding the controls was very satisfying. You have to really concentrate on what you are doing. The map forces you to be aware of your surroundings...So it's fun if you can do it.

Sally successfully followed her own advice by keeping organized, not letting her mind relax and concentrating on what was happening by making good use of her map. To be oriented at all times is vital and concentration is essential for this to occur. Sally continued with a comparison of concentration in two contexts,

> Concentration makes all the difference, in a team sport you can stop sit back and watch for a while, but in orienteering you either have to admit to yourself that you're going to just follow someone or you have to take the initiative and try to do it by yourself.

Christine shared Sally's viewpoint with these words,

> Our Lighthouse Park event was a big finale and you knew you were by yourself. I was never not concentrating, I always knew where I was going and where I was...even though I mucked up!

Who doesn't make navigational errors in a first event? However, Christine accepted her mistakes. Learning from making mistakes is part of living.

The boys' comments concerning concentration were a reflection of the girls. Barry recalled his experience of concentration,

> I did the course one section at a time, I just started along the trail and decided this was the best way to go and then went that way.

Barry made a decision and followed up his route selection with action.

Carlos suggested that speed of travel is also part of the navigational experience from control to control,

> I was thinking about getting to all the controls, no, not actually getting to them, because I knew I could get every control...it would be the running part of it that was the thing.

However, Peter contributed a most important dimension to thoughtful way-finding by saying,

> If you know where you are, then you know where to go next...if you don't know where you are on the map, then it's really hard to go somewhere, you sort of stumble around.

Peter recommended that a definite connection can be made between map reading ability and level of concentration. He spoke from experience as he "stumbled around" through the early part of the course.

Oliver's description attempted to portray how concentration (or lack of it) can occur in the reality of a competition,

> I think in a competitive sport you are not really aware of your environment that much, because with your adrenalin pumping, you are thinking about which turn to take and you are not really taking in everything...you see the trails, rocks and bush. You really take in the important things that you have to, when you are looking for a point of reference...you keep these reference points in your head, memorize them and then you just pass them along your route.

Oliver makes navigation sound easy! He was able to memorize much of the map detail and then apply this information as he went along. This is an advanced skill and was well handled by this novice orienteer. He had an unique experience of orienteering.

Bob, an experienced orienteer, provided his experience and insights into the value of concentration in this way,

> In orienteering a woodland terrain, there can be the generation of great intensity forced upon the runner

> by the nature of the sport itself. There is a sharpening and concentration on the scene in its most profound form. It is a loss of self within the landscape, an absorption into the terrain. Such an understanding is hard to describe and likely will not certain to the runner throughout an event. Rather a successful orienteer moves into and out of such intensity of awareness, the more successful elite competitors experiencing heightened levels of such absorption.

Other experienced orienteers described concentration as "it is a loss of self within the landscape, an absorption into the terrain." Pat, from her many years of orienteering involvement, also stressed the importance of concentration when she said,

> Orienteering takes a great deal of concentration. To be able to concentrate totally throughout an entire course requires self discipline. It is the most difficult part of orienteering...concentrating on what I am doing, seeing, thinking about; blocking out others in the woods, my competition, my family, my latest problem and fatigue.

Blocking out everyday life and focusing upon navigational challenge is vital. To add to this discussion Disley (1978) provided a poetic description of the essence of concentration in orienteering,

> complete absorption of the mind while the body revels in the best and most natural exercise of all, that of running cocooned in an aura of utter concentration the orienteer meanders...across, over and through some of the best countryside. (p. 15)

Caroline, as a novice orienteer, provided a summary statement,

> I think orienteering is as much mental involvement as the physical part of it...you have to think of it.

It is well known that orienteering is referred to as the "thinking sport". The level and quality of concentration is how one is able to respond to the diversity of navigational challenges within the experience of an orienteering competition.

Experience is Self Learning

> Man's search for meaning is a primary force in his life and not a 'secondary rationalization' of instinctual drives. This meaning is unique and specific in that it must and can be fulfilled by him alone.
> (Frankl, 1963: 154)

Self and Others

Individuals respond uniquely to different situations in interaction with others and to self awareness of life's experiences. Within the context of orienteering, the "search" experience is individual. This is due to the nature of the sport and the personality of each individual as he/she accepts the challenge of independent navigation through an unknown natural environment. The integration of personal resources in response to demands of participation indicates that each individual is physically and mentally prepared to continue the travelling search. Orienteering provides an opportunity to be challenged, confronted and inspired by the powers of nature. At the completion of an event participants have learned more about themselves and the encompassing natural world. An orienteering encounter is a self learning experience.

Each orienteer is sent off independently of others at a different time interval into an unknown setting. All experience their surroundings uniquely as they respond to physical stress and to testing of navigational skills in the moment of experiencing. However, after a safe return from the forest and race completion, there is an immediate search for others with whom to share experiences. One's humanness demands communication with others. It is the temporary separation from others and the reward of sharing recent forest experiences with like-minded individuals that allows this mutual exchange.

The students responded differently to the presence of others during their event at Lighthouse Park. Cynthia revealed insights about the individuality of orienteering as being a shared experience,

> It was sort of shared, one thing that I really liked, which I felt from the beginning, it was my experience.

Cynthia then continued to describe that experience,

> I was feeling pressured in a way, but the pressure wasn't coming from some place else. I felt sort of pushed, well, not pushed, but I felt as though it was neat, because you could set your own pace and you could lead yourself alone. And so of course, you were always pushing yourself and you were always holding yourself back.

Cynthia suggested that at times pressure was experienced externally from the presence of others and internally as navigational decisions were taken. An element of self competition was present in her experiencing of moments of uncertainty as she described the struggle within herself to complete the course. John related to these moments in his experience by saying,

> Once or twice I got confused and wondered if I was going the right way, but each time, I succeeded in finding the control.

Every individual experienced the same course in a different way, as these students revealed in their descriptions of the event. Each "story" appeared to be a variation upon a similar theme of "way-finding" through the unknown forest. A need for a sense of security was expressed by most of the girls and the presence of others seemed to be a reassuring factor. Elizabeth shared this comment,

> There were other people around who were doing the same thing, so it made me feel a bit more comfortable.

Indirectly Elizabeth referred to a shared experience with the words

"doing the same thing" which suggested a sense of security. Sally experienced others from a different perspective, when she said,

> I found it most satisfying, not necessarily when I was by myself, but when everyone was going one way and I knew that they were wrong...I went the other way and I found that great!

Sally expressed a wonderful feeling of satisfaction in the knowledge of having made a correct navigational decision by herself. Self competition particularly in orienteering is an ability to make ongoing decisions, regardless of the action of others. Caroline recalled her initial dependency on others during the early sessions in the forest adjacent to the school,

> Most of the time here I was maybe following someone, so I wasn't really doing it on my own... When we got to Lighthouse Park I was scared because I wasn't sure that I could do it on my own.

A natural reaction from any novice orienteer. Generally, it is best to initially work along with a partner and as confidence and skill develop then independence from others will also be fostered. Christine shared her experience of others as an indirect support to her individual endeavours,

> It felt more secure when you have other people that you actually know about being there...I didn't feel insecure, actually I felt really good, because when I found a control, I felt really satisfied that I had found it by myself.

Christine's confidence level had greatly increased due to earlier navigational practices. She enjoyed the presence of others in a general way, but valued her ability to find the controls on her own and without assistance. Christine described a previous incident in the University Endowment Lands,

> I found a couple of times just running with the group, we were all trying madly to find out where we were, but just taking it for granted that someone knew.

A typical experience that epitomizes the saying "the blind shall lead the blind and they both shall fall into the ditch." Definitely! A situation, whereby the "self" in each of us has not taken charge and allowed some thoughtful decisions to be made, rather, each individual is running on a whim. Fear of being alone, getting lost or lack of navigational skills are generally responsible for this type of ineffective behaviour. Self reliance is not based upon insecurity, lack of decision making powers and reliance on others but in skill learning and sound technical knowledge.

The boys experienced similar feelings of security as their female counterparts when others were present and a sense of apprehension at times when alone. However, both Paul and Carlos described the presence of others in their own way,

> Paul: The fact that there was someone behind you, made it an extra challenge, as compared to an ordinary run.

> Carlos: People were in front of you and behind you...I guess that was what made me run faster the fact that I didn't want anyone to catch up from behind.

A sense of challenge encouraged by the presence of others seemed to reveal the level of self competition. Although, Carlos later admitted that if he had become confused, there was generally someone around to assist him! Barry used the presence of others in a more confident manner as he described his experience with these words,

> When I passed people, it came to me, the feeling that I was going the right way. I was more confident in making my own decisions...it's just a better feeling of you're ahead and all the others are behind you.

Barry was able to use his newly learned navigational skills in a realistic situation and experienced an inner excitment of knowing everything was going well. He recognized that self competition was the ulitmate test as personifying reliance upon self in a competition against others. Similarly, Dick, an experienced orienteer, observed successful competition is self in indirect conflict with others within orienteering competition. It is this context that has a particular meaning for each individual orienteer,

> The very factors that occupy the mind are part of the interest and challenge. The challenge is twofold: the challenge of the course, the terrain and one's ability to adapt and then, the challenge of your other competitors.

It is application of learned navigational skills that provided the basis for realistic self competition against others in the orienteering endeavour which presented, an invaluable lesson to the novice student participants.

How can this sport be described? Surely, it is not the physical discomfort of being tired, wet and with aching muscles or being out in an unknown forested setting for several hours? These conditions are part of participation in the sport and it would not be orienteering without them. However, it is self being the focal point of the learning experience that is important to awareness through which each orienteer becomes fulfilled as an intelligent, physically active human being. Berman and Roderick (1977) presented the following observation,

> How rich, varied and marvellous is the person! Endowed with miraculous ability to make sense out of the richness of perceptions, impressions and experiences, the person has infinite possibilities. The individual can simultaneously probe deeply into innermost thoughts, while reaching expansively into the world. The opportunity to encounter the richness of the outer world permits one to live in community with others. Qualities of being alone and being in

> communion must combine in the same person to assure a rich full life. (p. 1)

This passage described how individuality is experienced, yet each is not without others and this interaction is particularly true in the context of orienteering.

Acceptance of Fairness

> Fairness is not found naturally in the organic world. Life itself isn't fair. Nature ensures that there are winners and losers and as often as not she endows the winners with an immutable edge in the game of life, and the losers with an inborn handicap. The cycle of life is a succession of unfair competitions, when something eats something before in its turn being devoured. (Disley, 1980:8)

To transmit these sentiments to the sport of orienteering reveals an universal concern that the competitive event must be well organized and participation must be of utmost fairness. This is a sporting ideal that most fair minded sports people would adhere to regardless of their particular sport allegiance.

Sally shared some overall impressions of her orienteering class experiences when she spoke of the culminating event at Lighthouse Park,

> It was like everything was starting in the same place and no one knew about it...it was a clean start from my wanderings about UEL and not knowing what I was doing.

Sally was suggesting that she appreciated the sense of fairness in the cross-country orienteering event. Everyone started out with at least one unknown, the park, and consequently a new map was used to test out recently acquired navigational skills.

It was a beautiful spring day, which helped to erase some initial fears as the students walked through the park from the parking lot to the start in an open area near the lighthouse. Most students felt they had "pulled it altogether" in the event, so far as their skill application

was concerned and were pleased with the results. Elizabeth spoke of her assessment of the event,

> Basically, I experienced orienteering as the way of orienting myself physically and mentally, by being able to use my own knowledge and skill to accomplish a goal...the last important thing I realy noticed was how good I felt, when I successfully completed my course.

Feeling good is a true reward to any physical endeavour successfully completed. Meeting navigational challenges alone is one of the unwritten rules of the orienteering experience. Nonetheless, in orienteering competition some problems have arisen that have aroused concern. It is to be anticipated, as the sport has developed an international reputation drawing thousands of participants from around the world to large five days events, that orienteering would eventually experience some difficulties concerning fairness in competition. Several unfortunate incidents were reported at the recent World Championships. No sport is immune to lack of "fairplay", when volume of numbers, pressure for fast times and the prestige that accompanies a winning performance by an elite competitor are concerned.

Disley (1980) cites several elements that cause organizers of large international events a definite problem and effect the calibre of the meet being held. These are selection of terrain, map, start time intervals, course planning and height of control flags. All these factors contribute to efficiency and fairness of a well organized event. Despite attention being paid to these items there appears to be one behaviour that even the best event organizers cannot deter and that is "following". In orienteering terms that simply means when one orienteer visually "hangs onto" another competitor by shadowing his/her every move and thus allows the lead orienteer to make all the navigational

decisions. Consequently, the "follower" receives a far better time than he/she would normally be credited for. A greater concern is that the "lead" competitor may lose his/her intense concentration, because he is aware of the "shadow's" presence.

Unfortunately, with thousands of competitors in multi-day events this situation is inevitable, even though there is an accepted international code of rules adhered to by all competing countries. However, Jackson (1982) stated these rules were hard to enforce and Holloway (1983) revealed his concerns by stating that,

> Although orienteering is the perfect sport for balancing mental and physical activities, it does suffer this unfortunate aspect that the unscrupulous can cheat. (p. 38)

Holloway also shared this observation,

> Orienteers in general have such strong feelings about the fairness and cleanness of their sport, that they are reluctant to level accusations of cheating against their opponents. (p. 22)

This obvious lack of fair play certainly has a tendency to undermine the very essence of orienteering. The words of Christine as a novice orienteer, reinforced these ethical concerns,

> I knew it was a big event and we were to obey the rules...I didn't really mind, because there were so many of us...but you had to do it on your own.

It is so important to reinforce this value from the initial stages of novice participation. Rewards are far greater when fairness is an integral part of the activity itself. At the novice level of participation it is vital to proceed at steady rate of progression, whereby, all participants are challenged to develop their potential. Nothing succeeds like success. It is necessary, therefore, to set well designed courses within the navigational limitations of the group, with opportunity for route choice and fast times by some. However, a sense of

accomplishment on having completed the course should be the ultimate experience of all, regardless of time. Self confidence, navigational skill and physical stamina are not attained quickly by most novice orienteers. They have to learn to think while traveling and to act independently of others. As a consequence, it should be unnecessary to rely on others and to thereby uphold the spirit of orienteering. Individual participation remains a personal encounter divorced of others. This is an endorsement of the true experience of orienteering.

Taking a Risk

The nature of participation in orienteering suggests an element of risk. Travelling on foot at speed through an unknown natural landscape, working independently and decision making about rate and direction of travel are all applications of sound navigational knowledge. Accidents are possible. Fortunately, injuries are rare occurrences in orienteering because of the multi levels of competition within each event. All participants select their course according to age, gender and navigational experience. Minor injuries to feet, ankles and legs do occur and are due to a variety of factors, one of which may be taking unnecessary risks.

At the novice level of orienteering, the most threatening dimension of risk taking is to sense a lack of ability in functioning effectively alone in an endeavour to keep oriented. It is a test of navigational knowledge to complete a simple course during the initial stages of learning about the sport. There always appears to be so many different aspects to remember during the early stages of skill acquisition in navigation. Sometimes a sense of panic may result in making an unnecessary navigational error. Unintentional risk taking may be adverted by providing a sound progression of lead-up navigational

activities to novice orienteers prior to participating in a first competitive event. Clear understanding of ability and establishing compatible expectations of performance may prevent unnecessary risk taking, particularly at the novice level of competition. "We can [only] make every effort to do our personal best... nothing beyond our best attempt really matters." (Orlick, 1980:199)

Several boys made reference to an element of risk in their orienteering participation. John shared the following comment,

> When you take a risk, you're running a chance of not being correct and that may lead to some bad happenings: like you can make a wrong turn off the trail or you want to cut through the bush and go she wrong way. You can end up nowhere and you won't know where you are. And so, if you want to take a chance, you have to be reasonably sure you can make it.

John provided some sensible advise for all novice orienteers by suggesting one need to be oriented and then every navigational decision may become a valid and calculated risk.

Peter reiterated the importance of being sure before proceeding along a selected route when he shared,

> I guess you decide whether the risk is worth it. You must have a very good chance to succeed; otherwise, you don't want to risk it, even if you go the conventional way.

He further elaborated on risk taking endeavours,

> In every activity you take a kind of risk. In orienteering, I mean you decide whether you follow the trail or you decide to run directly through the bush, take a road, go over the hill or down a path that gets you from point A to point B... You balance these route choices and take the fastest route.

Peter vividly described the many options available in selection of a best route. He also attempted to balance potential success with a note of caution when making that ultimate navigational decision.

Oliver, on the other hand, tended "to throw caution to the wind" by taking a cross-country route along a section of the course. He described the reasons behind his actions in this way,

> I just do it [orienteering] for the fun of the thing. I don't really go out and just do it to come in first...if I don't like doing it, I'm not going to do it, that might be a pig headed attitude, but if things can be fun, I'd rather do them that way. Taking things too seriously is not much fun.

Fortunately, there is always an individualist in the group and Oliver was confident of himself to take this viable option. He continued by saying,

> I didn't feel like running with all those people and it was really boring running along the trails like running around a track... there is nothing for me to do on my own and I thought that was really a drag... so I decided to go another way and that was the only way I could do it.

Oliver moved fairly slowly so others caught up and he really wanted to be independent and complete the course by himself and without others. He demonstrated the courage of his convictions which proved him right. This remark relating to the fact that "it was boring running along the trails" suggested he was being distracted by others and wanted to test his own navigational skills. Individually, some orienteers respond better to physical challenge and others prefer mental stimulation in risk taking endeavours. Orienteering brings these two dimensions together into a personal and worthwhile experience. Csikszentihalyi (1975) suggested that risk and intellectual engagement are combined in heightened concentration. In orienteering, if navigational decisions are thoughtfully made, then any risk involved has been carefully calculated for a successful outcome.

John provided a concluding comment,

> You learn about yourself because in future life you have to take risks, so it teaches you now.

Orienteering will obviously be only a small part of anyone's life experiences, but if in practising it one learns about oneself, then the endeavour is worthwhile. Risk taking is present in everyday living as well as in navigational endeavours experienced in an unfamiliar setting. It is part of a competitive spirit. At a selected level of competition, one may decide to set particular objectives, all of which provide an element of risk; for instance, to run a fast time and satisfy an improved level of physical fitness or to make better time than a particular participant competing on the same course. Similarly, one can take a more direct and shorter route in preference to a longer and safer detour. All decisions can involve risk, but without this type of challenge, an orienteering experience would not provide the excitement generated by navigational commitment in a competitive situation.

There is a dynamic balance between acceptance of challenge and risk taking within the confines of navigational decision making endeavours. Each is an integral part of the other and both belong to competitive orienteering and this sport is a "call" of being alone to navigate through unknown terrain. Realization that every decision is a calculated risk should not be a deterrent in navigational endeavours, but initiate an element of excitement. Orienteers drawn into a forested setting to test navigational skills, use physical ability to negotiate undulating terrain and experience the unknown.

Successful Winning

Everyone enjoys doing well, a feeling of satisfaction at having done the best possible. In orienteering, most participants experience this emotion even though there is only one ultimate winner. Nevertheless, quiet winners feel good inside and, therefore, experience success. Winning does not simply mean placement on the results sheet, but is a

matter of the enjoyment resulting from spending time in a natural outdoor setting and successfully completing the course. To be truly competitive, is to know how to both win and/or lose gracefully. In either case, this is not an easy task. Successful course completion and knowledge of results allows for comparison with others, an individual test of skills in solution of navigational problems posed during a competition.

The students shared their experience of doing well in their event at Lighthouse Park. All individuals had set a goal for themselves and the majority of them claimed success through realization of their aspirations.

Paul enjoyed the challenge:

> During my actual participation of orienteering you could not let your mind wander if you wanted to make the best time... It gave me a chance to CHALLENGE myself and practice my map reading skills.

Cathy appreciated the individuality:

> Orienteering takes place in the outdoors and it is an INDIVIDUAL competition...some of us would rather complete our course and enjoy the scenery, rather than worry about the actual competition.

Ernie preferred a fast time:

> Map reading in orienteering is important to find the FASTEST way to finish my course... I got lost 'cause I ran too far!

Barry felt a sense of accomplishment:

> At the start, I did the first few controls and realized I knew how to do it and wouldn't have any trouble...there is a good feeling of ACCOMPLISHMENT when you finish and find you have one of the lowest times.

Oliver went at his own pace:

> To win the competition I guess you have to orienteer and just walk. I am a DODDLER by nature and I like walking.

Caroline set her own goals:

> You have to set GOALS that you have to reach... I found orienteering both interesting and rewarding.

Edith felt she had tested herself:

> I am glad that I had no choice and experienced a sport of which I knew nothing...or I probably would have never TESTED myself... The feeling of independence is great and the feeling of control is very satisfying.

Elizabeth knows herself:

> You have to be quite aggressive and go for it, when I was sure of myself. I was mad, when I went by it, because I wanted to get done quickly. I felt kind of stupid but there wasn't much I could do about it, so I had to turn around and go back...I knew I'd finish eventually, but I didn't know how long it would take me to finish!

To conclude the students' reflections on their sense of competition,

> It's a competitive world...when you are in school it is a very competitive place... Why bother with 50%; it is not worth taking the course, in other words, why bother with school? It is the same thing in orienteering, if you are just going to do it and not challenge yourself or really get anything out of it, you would be just average to me, it would be really worth doing.

Sally suggested that if one was going to do anything in this competitive world then you have to make every effort to be successful so that the "doing" is a worthwhile experience, otherwise why bother? For Sally, at this juncture in her life, there would be no half measures, therefore, she would give everything she had to whatever project, problem or endeavour with which she was involved, hence her successful orienteering experience.

Finally, Christine shared her dislike for competition,

> I've been brought up to really dislike competition... everything, every class in school is a competition. We've become a competition oriented society, our lifestyle and everything. When you go into a P.E. class...as soon as you get in, they are challenging

> you to do something and orienteering is competitive ... I hate competition, it just makes me nervous. I don't even know which I hate most...losing I guess, but I don't even win all the time!

This is a vivid description of her view of life in a competitive world. However, Christine's concluding comments revealed that she does conform despite a philosophy that subscribed to less competition. Life experiences can appear to be over challenging at times and one wonders what has happened to the sense of fun that young people should be having in each growing up stage of their lives. Orienteering is a fun experience! The components of successful completion in orienteering suggested by the students include: challenge; individuality; fast time; sense of accomplishment; going at own pace; setting goals; testing of self and knowledge of self.

The nature of orienteering is to demand the best competitive spirit from each participant in this environmentally based activity. The intrinsic reward for all is being provided with an opportunity to be physically active and mentally stimulated in a natural outdoor setting in pursuit of navigational excellence. For a few individuals, there will be a more tangible prize for outstanding competitive endeavours in this forest sport. Competition will always be present in sport. However, it is recognition of this dimension in its rightful place within a personal commitment to sport, in this case orienteering, that is of vital importance and cause for reflection. Without a competitive element in orienteering, as Sally suggested, the intent of participation would be meaningless. Human beings need competition both at an individual level and with others. Holloway (1983) suggested how this concept can be achieved,

> Every top orienteer must have both the ability to concentrate fully on his course despite external distractions and yet be cool enough to make use of various opportunities which arise. (p. 38)

It is the "doing" that becomes the experience and for some it is merely doing one's best; but for all, through successful course completion, the experience of orienteering can become part of a controlled risk situation and an exciting recognition of effective navigational skills. This challenge of competition should be part of the orienteering encounter for all novice participants.

CHAPTER 8: RELATIONSHIP OF TIME AND SPACE

TIME:

> In time take time while time doth last,
> For time is not time when time is past.
> Unknown

Ongoingness of Time

Time, with its momentum and ongoingness is part of being human. Van den Berg (1980) stated that "Time is a matter of course." (p. 74) Time marches on relentlessly from yesterday into today and toward tomorrow and is reflected in human existence. Every moment of the time is lived within one's life span, being as much a part of the instant just past, as in this present moment of time and looking to potential involvement in upcoming future time. Thus, Lippitz (1983) reflected that "we always live with and in time". (p. 172)

Unique Experiencing of Time

Time is experienced differently by each individual and therefore impacts upon daily activity and effects one's attitude toward living. With reference to an orienteering meet, but more specifically the cross-country event at Lighthouse Park, the experience of time was unique. It was suggested to the students that every orienteering meet always begins "on time", although this is "orienteering time" and it may not coincide with local time. This discrepancy reflects an altered altered sense of time. In this context, time is generally calculated by means of a clock, therefore, it can be stopped and re-started again. Watches are set to orienteering time at the start of competition, so that

all participants are encouraged to compete within the competition time-frame as set by the event rules. Novice orienteers, however, all participate at the same level of competition and time is not considered as important as course completion. In this way all participants have an opportunity to see their names on the result sheet.

"Start time" of orienteering events is recognized by all participants prior to competition. The start clock is set to that time and is begun at the commencement of competition. Watches are accordingly adjusted to orienteering time for the duration of the event. Before the start of competition, orienteers feel the pressure of time in their own way. This pre-competition experience provides a dichotomy between resisting the start time and needing that moment of reality to arrive. Time is a constant, a fact of living that cannot be changed. Despite apprehension before the event, it is often with a sense of relief that the start time finally becomes an actuality. There is a passing moment when misgivings are discarded in the knowledge that confrontation with time as a dimension of the orienteering encounter has just begun.

Each orienteer is sent off on his/her respective course at a timed separation of two to four minute intervals. This allows for an individual rate of travel, depending upon level of physical fitness and previous navigational experience. Thus, when encountering another orienteer in the forest, it is almost impossible to assess the progress of the other or even to make a comparison with his/her journeying because each orienteer is participating at a different time-frame within the event.

At their novice level of competition, the students were sent off at one minute intervals (time schedule of school bus did not permit a greater time interval). This time separation was to encourage

independent navigation by each participant. This unique experiencing of time within the orienteering competition permitted each student to concentrate on his/her navigational problems experienced within a specific time-frame rather than being overly concerned with the minute by minute passing of time during the actual competition. At the initial stages of acquiring navigational competency, it is course completion that takes priority over pressures from an over-emphasis on contemplation of time.

Different Feelings of Time

To revisit the forested environment of an orienteering competition where the experience of time is uniquely encountered by each orienteer is described by Ted, the national champion,

> My experience when running orienteering or cross-country skiing are quite varied and unique each time I go out...I've found different environments give me different feelings. While running on flat open roads in farmland, I feel very alone and small and time goes very slowly... However, when I come to a narrow twisting path I feel exhilarated and want to run fast, it feels like I'm running faster, when I'm not.

He continued to elaborate further,

> Time goes very quickly while I'm orienteering. If everything is going smoothly and the orienteering demands a great deal of concentration, I finish the race and mentally feel like time has just whizzed by. Suddenly, an hour and half have passed.

Ted endeavoured to describe how he experienced time in different ways. In the first passage, he suggested that each specific setting processed its own unique sense of time. Van den Berg (1955) endorsed this concept by suggesting that each place has its own time and this was particularly evident in an outdoor environment. In the second section, Ted described time in relation to speed by saying time appears to go by more quickly

when orienteering was going well. Thus, the impact of time was encountered in distinct ways that result from a particular experiencing of the "here and now" of any moment in time.

The majority of students described their different experiencing of time in relation to an estimation of time, which reflected their comparative inexperience and naive level of understanding about time itself. Time is an accepted part of living whose ongoingness is generally taken for granted. However, how did the time element of an orienteering event impact upon the students? Cynthia shared her sense of time, when she said,

> You know it's time to go back, because you got to know approximately the distances between each [control] marker, so you thought it was time that you should be coming to another one [control].

Cynthia endeavoured to relate her travelling distance between control flags to her overall concept of time, in particular the length of time it took her to travel between each control flag, which represented her overall time estimation of the entire course. She seemed to implement her sense of time to her advantage, particularly as separation between control flags was fairly uniform in respect of the students' novice level of navigational experience.

John suggested with the following comment that his concept of time was related closely to the competitive dimension of his participation,

> When others are four minutes ahead of you, it is really hard to catch up on someone like that... otherwise, if you run ahead, they are looking for it too and you 'tag' it, they 'tag' it right behind you, then you start doing all the work.

John's recommendation concerning the distancing of participants over longer time intervals is well taken. Unfortunately, it is not too realistic in a normal school teaching situation, when students are constrained by a time-table. However, John's other point, that of

encouraging independent navigational decision making by all students, is important so that the incident described by John does not occur. Time separation is vital in learning appropriate navigational skills as an individual, so the essence of orienteering is upheld, and subsequently experienced by all participants.

In the context of others and their speed of travel, Elizabeth revealed her own maturity with the following comment,

> Out in the forest I found people running by me, but it wasn't realistic to think I could keep up with them.

Here, Elizabeth related her concept of time to speed of travel and knowledge of her own running ability. It had been constantly reinforced throughout the unit that all participants should travel at their own speed. Hence, Elizabeth was confident to go at her own speed regardless of others. The main unit objective was to successfully complete the course without being overly concerned about the time element.

Oliver supported this particular concept when he said,

> I don't think the time is very important and you said 'do the course at your own speed'...I didn't really do it [orienteering] for time, I just did it because I wanted to do it and wanted to have fun doing it.

Oliver remembered my endorsement of this philosophy in relation to an important factor, that a timed position on the result sheet is not possible without course completion by the participant. Oliver has an independent nature, so it appeared to be necessary for him to be enthused about his intended participation, which suggested to him the importance of a fun component, rather than over emphasis on time. This desire for his orienteering endeavours to be a personal experience was essential to Oliver, otherwise he would question the relevance of the activity. Likewise, Oliver endorsed John's earlier comments concerning the time

interval between participants, when he observed,

> I think competitiveness in this sort of situation should have been dealt with by having longer time [interval] between people, of at least two minutes; so that people could not talk to each other at all and there was no idea how far people were behind, because that really influenced me a lot. When I saw somebody who left four minutes after me and was caught up to me, there was no point, I could not win! So, perhaps I didn't run as hard as I would have, if I was alone and thought that maybe I could do well.

Despite his reservations concerning organization of the participant time interval for the event, it is interesting to note that Oliver revealed his competitive nature by his indirect reference to winning. His admission that he may have been able to improve his travelling speed, had he been alone, is a point well taken. Orienteering is an individual sport and those sufficiently confident in their navigational ability, relish the aloneness of the activity. Oliver was one such individual. He did not need the physical presence of others as either a support system or a distraction.

The idea of satisfaction with one's overall performance may be more important to a revelant orienteering experience than an overemphasis on the time factor. As Sally said,

> I don't think it's the time, it is who does the work...I was thinking, because I was the one doing the work, then I was satisfied.

She suggested that an individual enterprise, requiring thoughtful yet rapid navigational decisions is the reward in orienteering. Sally continued to develop this theme further by sharing the following observation,

> It's just the aspect of time and pressure that people don't really consider. It is not so much even the competing against one another, it is just that you are being timed.

Here Sally revealed in a few succinct sentences, the dichotomy of competing against others' time and her timed participation against the clock. She concluded with some practical advice,

> I think you lose a lot more time not following your map correctly and getting lost...so I didn't run the whole way and certainly never did get lost!

Sally suggested that use of sound navigational techniques would prevent time loss during a competition. This meant a great deal to her personally, because she had successfully completed the course for the first time without getting lost. It was interesting to note that the experiencing of time within an orienteering event made a different impact on each of the students. None seemed overly concerned or truly aware of time passing during their competition. Navigational challenges focused attention on the map and immediate surroundings of each participant. Although, inwardly all would have liked to have won, the emphasis on doing well by completing the course was paramount regardless of time taken. This approach is less threatening for novice orienteers, who should develop confidence in their navigational skills before they are asked to give serious consideration to a competitive time element.

Many external factors contribute to a varied experiencing of time within different contexts. One such dimension is a change in immediate surroundings. Varying landscapes impart a unique expression in experiencing them, thus awareness of time will differ accordingly. The experience of struggling up a steep-sided, wooded ravine appears to take twice the length of time than it would take to sprint down a trail for several hundred metres. In reality, there is little difference in the time expended to complete either physical endeavour. It seems that

different environments do provide a unique experience of time. Another consideration in an understanding of time is that in traveling through an unknown natural outdoor setting, one is not bounded by any preconceptions of how long the travelling will take, other than by understanding of the map.

A pause in journeying to momentarily absorb and make visual contact with a panoramic view from a vantage point along the route allows a split-second of time to apparently stand still. This is a moment in time that has been captured within and one is reluctant to relinquish this present into the past. It may be a humbling experience that causes a brief reassessment allowing for a possible change of perspective and a different outlook of the current situation, indeed of life itself. Revitalized by this pause in time, the navigational journey is continued.

An appreciation of time influences physical experiences in two distinct ways, time of day and weather conditions. Generally, there are several hundred participants in large meets resulting in some orienteers not starting until many of the early starters have already returned. Competition time has yet to begin for those not yet involved. Time seems to have perceptively slowed down. Ideal weather conditions have a tendency to effect awareness of time. Orienteers feel more active. This vitality allows for travel with greater speed and time appears to be within the momentum of the run as they experience an impression of fleeting time. However, when course time is calculated at the end of the event, there may be little change in performance time in the competition. Experience of time during a run on a fine day feels different, even if navigational errors are made. Yet on inclement days the entire Orienteering endeavour becomes an experience of time, in which every

component of the navigational pursuit represents an extension of a experience.

Time is experienced differently throughout an orienteering course. Each segment not only contributes to the total time of navigational endeavours, but also reflects a reaction to time taken on each "leg" of the competition that may vary according to navigational expertise. Each of these time experiences subscribe to part of the developing whole, assisting attainment of the ultimate goal of course completion in the least amount of time. In consequence, accurate navigational decisions are enhanced by a greater and more positive awareness of time. However, that good feeling can be readily negated if an inappropriate route is taken due to poor navigational judgment. Such action can result in being temporarily disoriented with a resultant sense of time lost. Essentially, when under pressure to make correct navigational decisions in order to obtain a lower competition time, awareness of time increases its prominence.

Different feelings of time experienced by the students revealed an understanding that represented the relevance of time in what they were doing. However, as Sally stated, it was the fact that it was the first timed event. These novice participants have yet to discover other dimensions of time that are an integral part of orienteering and make it more of a personalized experience.

Estimation of Time

The question of how long a particular course would take was an important concern to novice orienteers. Since it was, however, difficult to answer with any degree of accuracy, it was not surprising that course completion was of greater consequence than a concern for time.

Satisfaction in having successfully finished a course was initially most important to the novice participants.

Time may be estimated visually by calculation of potential travel time over a specific distance. Visual appraisal of landscape to be travelled must be done in consultation with a map. With sufficient experience, an ability to make an accurate time estimation of how long it will take to reach a particular destination is developed. Two factors of vital importance in this time estimation endeavour are careful observation of immediate surroundings and precise map reading skills. The map, if correctly oriented, will reveal all the specific details of the terrain. A combination of information from both sources, map and landscape, should result in a calculated time estimation of distance to be travelled. Only experience can assist with a more precise estimation of time in travelling across varying types of terrain. Route selection may be based on time calculation. For instance, trail running will appear to be of shorter time duration over a specified distance than traversing a rough surfaced open area of the same length. In this way, rough time estimation may be calculated for traveling through different landscapes.

Barry endorsed this concept with the following comment,

> I think, I looked at the map and got a general idea of how long it would take, so I wanted to make sure that I wasn't too slow or far behind... I thought it would take me forty minutes.

Barry used the opportunity to study his map prior to start time and made a time estimation of the course. His navigational inexperience reflected an inadequate calculation, because he took a little over half that time to complete the course. Indirectly, he was relating the size of the park, as represented by the map, to his own instincts, having walked

through part of the competition area from parking lot to the starting location in a wooded clearing. However, his idea of getting a feeling of time relative to park size was a sensible approach even though time estimation is not truly valid until actually experienced, as Barry was later to prove to himself. Peter echoed Barry in his discussion of time, when he shared his thoughts in the following way,

> I think it is important to know the length of the course, because you can time how fast you are going to run. If this was a really long course, you don't want to run too fast in the beginning...things like that, you can judge more accurately how fast you have to run.

Peter, when making a specific relationship between estimation of distance and calculation of time, presented a sound concept. However, time taken throughout the course is dependent upon "runability" of each leg (segment of the course between control flags) in relation to the topography. Actually experiencing the terrain may substantially alter visual estimation and map interpretation. This situation may arise from initial haste in a casual glance at the map, and similarly to changes in the landscape that were not represented on the map after the time of its original production.

The relationship between fitness and estimation of time when correlated provide another interesting dimension as a point of discussion. Peter introduced this topic when he said,

> Fitness makes it easier, because if it [course length] was any amount of time, then the more fit you are, the faster you will be able to run or the easier you will be able to take the bumps and knocks, if you fall or something like that...it would be easier and quicker to finish. I mean the more fit you are, the faster you'll take it and you might not get so tired.

Peter suggested that if participants were fit then the physical demands of a course would not result in a slow time, and that to travel faster

without becoming overly tired would be preferable. In this context, Peter was saying that time taken to complete a course revealed a level of personal fitness. Time is important as a competitive measure of excellence, but it is physical fitness that will counter the rigours of traversing a physically challenging outdoor landscape destined to produce slow times if orienteers are not able to maintain an appropriate pace.

Carlos, the ultimate winner of the class orienteering event at Lighthouse Park shared his thoughts about time pertinent to space, speed of travel and competition. Initially, Carlos suggested that the location was influential in his consideration of time, as he said,

> It was like everything was so close or maybe it was because I was running fast as it was downhill... I seem to run faster through the woods, than you can on a track, most definitely, because you are on softer ground...it's a matter, you see all those trees and you see them way down the path.

Carlos' description revealed his experience of speed as he travelled through forested trails and his feelings of enclosure as he ran down tree lined paths. Trees that appeared to rush past him provided a sensation of speed in contrast to jogging around a spatially expansive track. Maybe the ground softness of the trails reinforced his impression of faster travel suggesting lightness, rather than the pounding of feet on the hard surface of a regular track. Carlos provided additional description,

> Out there [Lighthouse Park] there were small trails and big trails and you were following the path on your map. Whereas here [University Endowment Lands] you can feel yourself running, I mean I could run faster here than, I could there because I was here and could just run.

He found that familiarity with a location provided a certain degree of confidence. He knew the University Endowment Lands area well and could

travel fast when asked to navigate through this area. Carlos further shared his thoughts about time within the context of an orienteering experience by saying,

> When you're being clocked and you have a map, it gets to be exciting and you want to run fast.

Here Carlos introduced time in relation to competition. To the majority of students this is a most important dimension in much of their other sports participation. In the following vivid description he portrayed how time became an integral part in many aspects of orienteering,

> I ran straight to the control [flag] and punched it, found out where I was and ran straight to the next control, so that was the way I paced myself...while you are running, you are putting in extra energy. When you get to the control [flag] you are going good and then you get another adrenalin flow as you run to the next one fast.

This description revealed Carlos' excitement about the challenge of maintaining a fast travelling speed from one control flag to the next with emphasis on knowing his exact location at all times. Correct orientation is important to attaining a fast time. This concept is important to positive experiencing of time within an orienteering competitive event. In Lighthouse Park it was different as Carlos described his experience,

> You were going to run but you didn't know the other times. I came in and I had a feeling it was a good time, but then I was worried whether someone would come in with a better time, but there was nothing you can do about it... You can tell that your time is going to be much less than the others if you can remember when everyone started...I caught up to them and then they were going to be many minutes behind one...it was rather remarkable that I won by only 13 seconds...it's so little time.

Carlos, as the rest of his classmates, had never been exposed to this kind of time experience within a competitive sporting event prior to the Orienteering event. He reflected, in this statement, on the thrill

of eventually learning that he had won by thirteen seconds. His victory was well earned. Another interesting reflection by Carlos revealed his thoughts about his female classmates and their attitude to competition in relation to time,

> If the girls notice the time I don't think it would affect them, for guys are a lot more competitive, not that this was so for everyone, but there were a few really competitive people in our class.

His assumption about girls and their experiencing of competitive time within an orienteering event was entirely unfounded. They may not have visibly conveyed their competitive nature, but each girl desired to do well as an individual. Yet their lack of comment could suggest that this dimension of their experience was not considered overly important. Carlos can, however, speak representatively for the boys in his class who certainly enjoyed the excitement and challenge of competition. Certainly, estimation of time was experienced in diverse ways, such as the visual appraisal of landscape across which one has to travel while remaining oriented with a map and the impact of environmental differences upon travelling speed while responding to a self imposed "target time" for course completion. In addition, recognition of benefits of being physically fit upon result time as a measure of one's performance in comparison to others become a more realistic expectation to these novice participants.

Time is Integral

Time is an integral part of one's being. Awareness of time in one's life varies according to how time affects everyday interactions with people around us and is a personal response to different situations and through a diversity of experiences. In orienteering endeavours time is encountered in the context of a navigational event of short duration.

The pressure of time can be an intense experience as each orienteer is participating against time provided by the competition clock. Time is of the essence to each individual, as the goal is to complete the course in the least amount of time. However, the importance of time as part of the competitive endeavour is solely dependent upon its relevance to each individual orienteer. Time provides a challenge to make sound navigational decisions at a speed that will not unnecessarily disrupt the flow of navigational travelling. Time should not distract from these endeavours, but rather add an element of excitement, in using mental and physical skills to effectively complete a course. Without any time constraints this element of excitement would not inspire a realization of navigational potential, whereby skills are truly tested against others, environment and indeed time itself.

Satre (1956) suggested that time synthesizes three temporal dimensions of past, present and future and the only possible method to understand the experience of time is through its totality. If the dual relationship of time and space is to be recognized as integral components of a navigational experience, then it is appreciation of their interconnectedness that allows for an encounter with each element as important dynamics of an orienteering encounter.

A Spatial World

> Gestures, attitudes and groupings emerge in rhythmic design, an interplay of mood and motion vitalize space and time. (Ellis Price, 1983:47)

The Setting: Spatial Surroundings

Space is all encompassing. To observe everyday movement through one's surroundings is to realize that this spatial passage is taken for granted suggesting that attention is not focused on where the travelling

occurs. Awareness of where this movement takes place prevents collision with objects that temporarily obstruct or impede travel through an immediate environment. An automatic "path-finding" through a spatial landscape is seemingly experienced without any conscious thought.

Space has many connotations, and the Webster's dictionary (1981) provides ten meanings. However, particular reference is made to one definition as a basis of discussion towards a mutual understanding of space,

> Space is boundless three dimensional extent in which objects and events occur and have relative position and direction. (p. 1104)

There is a corrolary to this statement which states that "absolute space is physical space independent of what it occupies" (p. 1104). Thus, space is both absolute and boundless. It is not surprising that conscious perception of space is relative to the importance attached to one's spatial surroundings.

Map and Terrain: Spatial Relationship

Orienteering is experienced by novice participants in a natural outdoor environment, a mapped area of approximately several square kilometers. This space is described as semi-wilderness area of undulating forested topography. Novice orienteers study a map of page sized dimensions and gradually begin to fully appreciate that this sheet of paper represents the spatial area to be closely observed during a competitive event. How can extensive three dimensional space be represented so effectively by multi-colored patternings on a small piece of paper? A specific scale is identified on every map. Orienteers learn to interpret a scale of 1:10,000 cm. (centimeters) to mean that one centimeter on a map represents 10,000 centimeters (or 100 meters) of ground surface on the terrain. In this way, map scale provides a basis

for perceiving spatial relationships, although initially, it is a difficult concept for novice orienteers to understand.

Christine endeavoured to describe her difficulty in understanding the fundamental concept of map reading in relation to space,

> I had never been to Lighthouse Park before so I had no idea what it was going to be like...it was different because I looked at my map and knew where I was and which way I was going, but what I hadn't realized was the distance and the scale of the map.

It is necessary to initiate a visual dialogue between the orienteer, map and surroundings. Sometimes, the transition is slow, as reluctantly traditional and general assumptions about space being "over there somewhere" are relinquished by novice orienteers to be replaced by more realistic understanding of this spatial relationship between map and surroundings required in orienteering. Understanding improves with realization that to visually move the eye across the map for a distance of about half an inch, is to say that in reality a distance of one hundred meters has been travelled through an outdoor landscape. Initially, size is relative and with additional map reading experience a better sense of space/map relationship with the terrain develops.

In an orienteering encounter, spatial surroundings are portrayed on a map in such a way that multicolored diagramatic patterning becomes a picture of the ground. In this situation, novice orienteers initiate their understanding of a relationship being established between the natural features such as hills, streams and cliffs and how these locations are represented on the map. The association of terrain and map occurs at three levels: transposition from a physical being to inanimate object, a translation from three to two dimensional form and finally, transformation from land feature to map symbol. Space is to be

considered as all encompassing, multi dimensional and absolute by orienteers, regardless of their level of navigational experience.

Movement Through Space

Movement through space permits each individual to occupy different dimensions of space according to a particular mode of mobility. To be specific, in orienteering travel is predominantly on foot throughout the duration of an event. Movement within the context of space has been described through an analysis of movement introduced by Laban (1963). The concepts of general space (forest) and personal space (individual) combine to elicit understanding of space in relation to pathway, level and direction as experienced in orienteering.

Pathways define straight or curved lines of travel. Level relates to a medium space range as orienteers travel on foot. The last dimension of space is direction. The predominant direction of travel is forward motion assisted by effective use of map and compass and allowing for constant orientation to magnetic north. However, there are occasions when novice orienteers may become disoriented in forested space and feel that they are running in circles. Realization of the fact comes when a feature is recognized that has been passed before. This space analysis of movement reveals how a traveling mobility pattern through general space of a forested landscape is experienced individually through personal space by each novice orienteer.

Changing Horizons

Horizons in space are multiple and change in concert with bodily action, in this case, of a novice orienteer travelling through an undulating forest. Spatial horizons are described as the farthest limits of visibility from a specific location, whereby with a turn of the head, the departure point is seen and visually linked with an intended

destination. In the context of orienteering, this visual scanning serves to provide an overview of surroundings across which the novice orienteer will travel. In undulating terrain, however, natural obstacles obscure the view of features causing only an impression of the landscape ahead to be revealed. For this reason, it is important for novice participants to have a map which provides vital information about the unseen terrain ahead. Harmonization of map and terrain permits continuance along an intended route of travel. The multi-dimensional components of forested space are perfectly represented on the map, thus allowing travel at speed through this unknown environment without prior experience of the same locale in reality. It is necessary to divide an intended route into visual packages so that "partnership" is maintained with both map and surroundings. For novice orienteers, if this visual link between themselves and their spatial setting is lost, then incorrect spatial interpretations are made of a current situation in relation to an intended route selection. Lakoff and Johnson (1980) provide a metaphorical analysis by suggesting that as a journey is made, more of a surface is created and so spatial orientation is important in a navigational journey.

Appreciation of both size and depth perception become distorted when spatial understanding does not make a viable connection between map and the reality of the terrain. This spatial difficulty was experienced by novice orienteers in particular reference to map scale. For example, Cynthia's spatial dilemma was sensed in the following comment,

> Sometimes, I would run along and find out that I had no idea where I was because the [map] scale was so different.

This was understandable since map scales are not identical on all orienteering maps and this situation was experienced by the students

during the unit. As novice orienteers, it was difficult to establish a spatial relationship between themselves, map and terrain.

Peter expressed his spatial problem with the size of park and its representation on his map,

> Unfortunately, the actual size of the park didn't hit me maybe as hard as it could have because I thought, it's not that far... I didn't realize it would be that important.

In order to assist the students in working out the relation of map scale to actual physical size of Lighthouse Park, competition maps were distributed prior to their start time. The walk down from the parking lot to the open area, where the event was to start, was pointed to them, as being about two thirds of the total length of the park. However, some students still did not fully appreciate the relationship between map scale and park size. This resulted in their experiencing some initial navigational uncertainty. However, Oliver revealed confidence in his map reading skill when he shared the following observation of map scale in relationship to park size,

> I knew the size and the area...well, I didn't know the area other than just by looking at the map. I had two minutes to look at the map and I figured out how big it was and how far I had to go.

Generally, this spatial relationship is a difficult concept to comprehend and it is fairly unusual to find a novice orienteer feeling so confident in his spatial relationship.

Caroline was more philosophical about map interpretation in establishing a spatial connection between herself, map and terrain, as she shared her thoughts,

> If the area is not very big and if you get lost, I would walk in a straight line so I'd have to get somewhere at some point in time.

She gave some practical advice with this observation,

> I guess it's just not so easy to get lost in a small area...since I knew where the parking lot was. I thought that if I get lost I would most likely try and find my way back there and wait for a bus!

Caroline suggested that size may be a deterrent or a comfort. Disorientation may occur in any spatial area regardless of its size. It was a defensive mechanism for Caroline to have decided how she would relocate herself with the outside world if her navigational skills proved inadequate. Her suggested method of traveling in a straight line is a sound one in general terms, so long as she avoided the many cliffs that were widely dispersed throughout this particular park.

When a map represents undulating forested terrain, passage through this type of area is frequently experienced as an obstacle course. Negotiation around a lake or copse of trees, provides a deviation away from straight line travel as determined by a compass. The space encounter is experienced differently when involved in a traverse across an open area or following a wide track lined by lofty trees or emerging from thick vegetation onto a knoll. In each case, there is a need to look beyond and towards the horizon in the distance. These examples of natural features are visualized as either vertical or horizontal space, for instance, the flat lake surface or perpendicular side of a tree line. To look up or across and away from oneself is to experience both the horizontalness and verticality of space.

Space may feel crowded, even though each orienteer is predominantly alone throughout the duration of an orienteering event. On many occasions, orienteers experience an impression that surroundings are impinging upon their personal space. The closeness of a cliff or the massive trees of a typical rain-forest can easily suggest a feeling of

enclosure, being dwarfed by immediate surroundings. The vertical dimensions of these tall natural features sometimes make an awesome comparison to human stature. In reality this is true, yet orienteers have mobility and these natural features are statics. There is no need for one to linger in this seeming confinement but one can travel into an area which is not spatially confined as experienced by running through an open meadow or moving along the top of a ridge. With this expansive feeling it seems that space being traveled through has been inherited momentarily and yet it reflects a temporary impression of environmental invasion of personal space which is not an unpleasant sensation.

Barry and Carlos both experienced this sense of enclosure and in expressing his thoughts in this way, Carlos shared this reflection,

> I found we were in such an enclosed spot as everyone was going into the same control location.

In this instance, Carlos was feeling the presence of others enroaching on his space, particularly as several people were coming into the "enclosed" location of the control flag. On the other hand, Barry expressed his sense of pleasure with these words,

> I liked being in the enclosed trail, you get a different feeling...you are by yourself and you get more enclosed feelings...enclosed by the trees.

This suggested that Barry enjoyed the closeness of the trees as he ran the trails. It was for him a pleasant and personal experience of orienteering.

Estimation of distance is a specific skill and an important element of the navigational technique in orienteering. Pace counting determines an approximation of distance traveled. This simple technique involves two walking strides equaling one orienteering pace. Novice orienteers were taught to estimate how many paces they would take over one hundred

metres of varying surfaces of terrain. Pace counting provides an estimation of distance in the reality of the environment when one has first determined the approximate length of an intended route from the map. Calculation of the distance to be run during an event by novice participants comes with experience.

Space partially determines direction of travel and assists passage through a forested environment. Different locations within the forest can effect spatial perception of distance. On the map an estimation of distance is made from a present location to a potential destination point, but upon actually experiencing that space, the route length may appear to be shorter or longer than anticipated. This is largely due to the density of vegetation and roughness of terrain along the route to be travelled. The distance in reality does not change, but experiencing it can alter a sense of spatial perception of the horizon during an orienteering experience. This concept is initially difficult for novice participants to understand.

Space Patterns Within Nature

Spatial patterning of nature is made manifest as visual awareness becomes attuned to the myriad of intricate designs that are part of an outdoor landscape. For the novice orienteers, it was virtually impossible during the time period spent in the forest not to be aware of their immediate surroundings. There were moments during competition when it was possible to pause and wonder at seeing the patterns and shapes of space within a natural environment. Momentary distraction from navigational decision making by the orienteer to visually participate in an aesthetic experience of natural beauty and a brief appreciation tempered by observational ability and emotional output is a vital component of an orienteering encounter, because space may never be

experienced in a vacuum. Thus, an appreciation of a surrounding spatial world as experienced in orienteering permits an awareness of this dimension of human existence and allows the groundedness of that spatial environment to be fully experienced. Seamon (1984) suggested that we are not separate from the world and we experience a sense of place through spatial and environmental grounding. An orienteering encounter provides an opportunity to experience the multiple spatial dimensions of natural outdoor settings.

Spatial awareness becomes a more conscious and relevant concept to novice orienteers as through navigational experiences, each participant recognizes the spatial relationship between the map and his/her surroundings.

CHAPTER 9: ENVIRONMENTAL AWARENESS

> Awareness is becoming acquainted with environment, no matter where one happens to be. We do not suddenly become aware or infused with wonder, it is something we are born with.
>
> (Sigurd Olson, 1976, p. 33)

Introduction: Being Part of the Environment

All human beings are an integral part of their surroundings, whether this interrelationship is conscious or unconscious. Realization of this interconnectedness as reality becomes an unalterable fact, in terms of "being" at this point in one's life history, even without full appreciation of the fact that "everything is related to everything else" in the environment (Hungerford & Peyton, 1976). Without their surroundings all individuals would not be in existence. Each is an integral part of an enveloping environment. Storer (1954) stated that "the very close interdependence between each member of our community and the rest of the environment" (p. 82) assists in consolidating an eventual knowing acceptance.

However, it is appropriate to provide a definition of environment. Webster's New Collegiate Dictionary, (1981) provides an initial starting point, "Environment means circumstances, objectives or conditions by which one is surrounded/encircled" (p. 378). Other explanations from the same source related to the environment suggest, "A complex of climactic, soil and biotic factors that act upon an organism or an ecological community that ultimately determine its form and survival."

Alternatively, environment is the "aggregate of social and cultural conditions that influence life of an individual or community." Finally, the environment is "an artistic or theatrical work that involves or encompasses the spectator." It is interesting to note the connection between all four definitions that help in describing and understanding environment in terms of awareness of what surrounds all human beings.

The word environment is a collective term. Within the environment there is a coming together of a compilation of circumstances, objects, conditions and factors. Into this diverse setting, we (as individuals, spectators, or community of...) are encircled, influenced by, and acted upon to determine a way of life and ultimate survival. This total enterprise reveals a human endeavour interacting with a variety of distinct environmental contingencies. It is a dynamic inter-relationship. There are so many dimensions to the environment that it is not surprising that the level of awareness of each individual will vary according to his/her particular life-style.

Acceptance of the belief that each individual is shaped to a great extent by his/her surroundings is a powerful challenge for the future. It has been suggested that the education system has a key role to play in bringing about this change of thinking. Change has begun over the past decade, with environmental studies undertaken by educators and researchers such as Crompton and Selar (1981), Rejeski (1982), and Rosenstein (1979). Their focus has been to determine learners' environmental attitudes as active participation occurs in the outdoors. They have found that an interdisciplinary approach used in an environmental education course incorporating outdoor adventure activities and science enhanced environmental awareness through an analytical approach to the outdoors. Kudlas (1984) suggested that high school

learners not only learn correct wilderness conduct and attitude, but ecological rationale for their conduct. "An improvement in the environment always begins with self." (p. 10)

Despite this evolving trend within the current education system, there is an urgency to do more. To make real change, attention must be focused on each individual so that learners become involved in physical activities that demand a conscious environmental interaction through their participation on the outdoors. Orienteering is one such activity.

Orienteering as an Environmentally Based Activity

Orienteering participants are drawn into a knowing and dynamic partnership with a natural outdoor setting. Cynthia, in response to being asked to comment on how she experienced the outdoor environment when orienteering, shared the following description,

> It was very beautiful with all those trees. It was also fun because we were wandering all about in nature and at the same time going somewhere with a purpose, trying to find a control flag. It's a bit like interacting with nature, using the little knowledge you have to find your way about. It was very beautiful, especially the trees. In a way, it made me feel very inferior sometimes because the trees were so big and everything and you were trying to find your way around.

Cynthia's description suggested her appreciation of a balance between respect (awe) of nature, in particular the trees, and the endeavour of finding one's way through the forest. It is important to realize that the concept of "being oriented" to one's surroundings is not unique to orienteers. All individuals use their innate sense of navigational ability to travel from one location to another throughout every conscious moment of their everyday lives. Carlos explained a sense of environmental closeness,

> You come closer to your surroundings in the outdoors, as you learn that you can find your way in the woods.

> In Lighthouse Park, you would feel your surroundings sort of...it's hard to describe...I just liked my surroundings there.

This feeling is certainly endorsed by many experienced orienteers when they speak of "a oneness with nature".

Mental Map in Everyday Navigation

To use one's mental map is to respond automatically to a "way-finding" situation in order to reach a pre-determined destination. This apparently spontaneous response occurs in a familiar area. A mental map provides necessary visual clues and allays fears of getting lost when planning to revisit a known location. A route has been programmed by one's mental map and without any apparent conscious thought can permit travel through a familiar area. In orienteering, however, a specialized topographical map is used to facilitate travel through an unknown area, thereby not permitting use of a mental map.

Peter, from his limited navigational experience, reinforced this idea by saying,

> Orienteering is a very environmental sport because you should be aware of your environment, the trails and everything, so it will give you a better understanding of the woods.

He was saying that being there in the woods provided an opportunity to become more aware of one's surroundings and that this was an important dimension to way-finding. Navigation represented following an optimal route through an unknown landscape with the assistance of a map. Peter, although a novice participant, had experienced forest paths, streams and hills before and had a mental images of these features as he looked at his orienteering map, not specific perceptions, but enough confirmation to recognize each feature as it was in the reality of an outdoor landscape of Lighthouse Park.

It is true that an innate aspect of navigational skill is a mental map, which enables movement without any premeditated thought in everyday life and during an orienteering event. As Christine recalled, it is possible to be aware of one's surroundings,

> My first real orienteering experience could be described as beautiful. What was remarkable...was the quiet serene beauty of the forest. A natural outdoor environment is not artificial. It is different...in your surroundings, you're so more aware of everything, everything that's going on as you run.

As a novice orienteer, Christine came into a natural outdoor setting and expressed her surprise and appreciation of that environment. Mental maps provide a basis for acceptance of a known route in a familiar location that is traveled with apparent unconscious thought and reaching one's destination is due to observation of similar surroundings on a previous occasion. This environmental awareness permits continual use of mental mapping capabilities in everyday life and it also enhances navigational endeavours as experienced by novice participants.

Linking Map to The Environment

Orienteering demands a conscious and sometimes exacting relationship from the novice orienteer and his/her immediate surroundings, whereby reliance upon a mental map is effectively integrated with the more tangible representation of a sheet of paper. An official printed multi-coloured orienteering map provides an accurate picture in diagramatic form of an unknown outdoor environment.

Sally reinforced the importance of a map by saying,

> It forces you to be aware of the trails and your surroundings...by noticing physical features of the land, like marshes, and rock faces [cliffs], I found my way fairly easily.

In the unknown surroundings of Lighthouse Park, it was evident that these novice orienteers related to the trail system as an initial means of orientation because they were not required to travel cross-country; in this way, the trails served as a particular point of reference for those who had not established an affinity with their total surroundings. When first introduced to orienteering, novice participants generally experience some difficulty in relating to a map, because initially, it represents a confusing configuration of lines, shapes and colours. However, these become intelligible and a gradual appreciation of the way in which a map can represent a picture of the ground was experienced. Bengtsson and Atkinson (1977) suggested that "we may want to think of a map as a book with a language all its own" (p. 46). Thus, as a book has chapters, so an orienteering map has components. Accuracy in map reading is a significant skill in the "literacy" function of orienteers at all levels of navigational experience.

Observational Awareness

> To look at anything
> If you would know that thing
> You must look at it long:
> To look at this green and say
> 'I have seen spring in these
> woods', will not do - you must
> be the thing you see:
> You must be the dark snakes of
> Stems and ferry plumes of leaves
> You must enter in
> To the small silences between
> The Leaves,
> You must take your time
> And touch the very place
> They issue from.
> (John Moffitt, 1961, p. 118)

Orienteering activity takes individuals beyond any usual viewing of their surroundings. The observational powers so vital in this sport may be wasted in other settings, unless a concerted effort is made to become

attuned to one's immediate surroundings during everyday life. A transition can be made that connects an appreciation of nature's complexity in natural outdoor settings to the inventiveness of man-made structures of urban environment, resulting in environmental awareness being a universally accepted concept endorsed by all humankind.

Observational skills are used extensively during orienteering participation. It is fortunate that this ability is transferable to everyday lives as a greater awareness of one's surroundings is developed.

The following comments represent some of the students' impressions of their first tentative environmental interaction in a natural outdoor setting through orienteering:

Michael: I enjoyed orienteering because it was an interesting setting and you must be able to jog for long distances through rough terrain.

Celia: Orienteering takes place in the outdoors. Although a competitive sport, many can enjoy their environment while completing their course at a leisurely pace.

Steve: You are in an isolated place and you have to reach another isolated place.

Paul: You can turn your participation into a quiet leisurely scenic experience by taking your time and enjoying your surroundings.

Ernie: I enjoyed our last event...that's when counted on all my skills to find myself through the forest.

Janet: I found that you needed to be quite aware of your surroundings. It took great skill to run quickly downhill over steep rocky trails. When I got tired, I almost fell and tripped a few times.

Olivia: I thought it was fun as we ran on trails and stepped in puddles and mud. The air was refreshing and scenery was beautiful.

Joan: I was using navigational skills in a strange strange environment.

These interesting comments from the Grade 11 class portray various descriptions of the outdoor natural environment of Lighthouse Park. In them, each student revealed a particular definition of that setting. In so doing, a little of their understanding of what was experienced in these surroundings was shared and the extent of environmental impact becomes more apparent.

In describing the environment the students used the following terms: "interesting setting," "in the outdoors" and "scenic experience" to a "strange environment" (which hopefully meant 'new' in Joan's experience). It is interesting to note that a more specific term was used to indicate deeper level of environmental awareness. The students expressed this notion in the following way: rough terrain, isolated place, through the forest, steep, rocky trails, puddles and mud. In so doing, they were endeavouring to describe in a more intimate way their recent experience of that environment, suggesting that a varying degree of environmental awareness was experienced by these novice participants.

There was one unique area for a control location selected for the orienteering event in Lighthouse Park. This was an ideal setting for a control flag. The students here describe the reasons why this particular place was selected,

> I remember a place as being really nice...it was only a big flat rock and that was really neat. It was different from all the other places, this big slab of rock. I think you could see everywhere. It looked like something on the Gulf Islands and not like Vancouver. I thought it was a nice location because it looked different and it gave you more of a feeling of naturalness.

Cynthia's word picture is reinforced by other girls' descriptions of the same location. Sally recalled the same area,

> I remember the place where I went along by the rocks and you could see the water...there were arbutus trees and that flat rock. It was light...you were less in the dense forest. Many of the Gulf Islands are like that, the way the rocks are all so smooth.

Christine shared her environmental impressions of this area in the following way,

> I just thought it was really pretty where it [control flag] was on, that sort of flat rock. It was off to the side of the trail and you overlooked the water. It was grassy too and that was pretty.

Elizabeth provided a brief and more generalized description,

> I enjoyed the part of our course when I went downhill, past the bridge and on towards the open area...[flat rock]. I noticed the water and rocks there.

By including these four descriptions of the same area, one is able to determine the environmental impact that each girl experienced at the moment of her arrival on the big flat rock open area. It is possible to capture a more comprehensive picture of the locality. It should be noted which specific environmental feature was particularly noticed by each girl. Although rocks and water were evident in each girl's description, these landmarks serve to stimulate a unique reflection of this particular environmental experience. There is another factor that probably led to their descriptions. The class was accustomed to the University Endowment Lands, a comparatively dense evergreen forest adjacent to their school. There the terrain was gently undulating with a good network of well maintained trails. This environment was in sharp contrast to Lighthouse Park which was rugged, rocky and full of roots. Definite changes in elevation with a great deal of climbing up and down, thick vegetation and small features were interspersed throughout this coastal forest.

It was interesting that the beauty and environmental impact of this park did not leave a lasting impression on the boys in the class. The physical experience of orienteering was of greater importance to them, subsequently, their environmental interaction was at a level more practical than the aesthetic domain suggested by the girls' comments. Perhaps because this event was a class competition that concluded the orienteering unit, it seemed that the boys approached their surroundings in a more aggressive and competitive manner.

Over time novice orienteers appreciate the importance of their eyes in providing the basis for the chain of events that represents an act of seeing. In orienteering, a map is held in front of the body, with the function of the eyes to bring the immediate surroundings into sharp definition and within the context of a map. This must be a learned technique for the novice orienteer.

As the following statement by Franck (1973) affirmed, there is a difference between seeing and just looking,

> We do a lot of looking...perfected every day, but we see less and less. Never has it been more urgent to speak of seeing... Looking and seeing both start with sense perception, but there the similarity ends. The purpose of "looking" is to survive... When, on the other hand, I see - suddenly, I am all eyes, I forget this me, am liberated from it and dive into the reality of what confronts me, become part of it, participate in it. It is really see, to see ever deeper, ever more intensely, hence to be fully aware and alive...seeing things, thus I know who I am. (pp. 3-6)

This is a sad reflection of the times. Consequently, it is important to encourage novice orienteers to be more observant and conscious of their surroundings as an important goal in learning the navigational skills of this sport. Orienteering as an environmentally based activity requires skillful use of a highly detailed topographical map, to facilitate

observational skills by the orienteer. Palmer (1976) suggested with novice participants that the map is best understood by having it appear as an "aerial photograph" or as looking down from above. "Orienteering is about maps and the first step is to help learners understand what is a map...an 'air picture'" (p. 14). Without powers of observation, then a map is not an effective tool in the hands of an orienteer. It is important for novice orienteers' that seeing should become spontaneous, effective and thoughtful so that for a fleeting moment in time, map and immediate surroundings are brought together in unity resulting in greater environmental understanding.

Elizabeth endeavoured to convey her environmental experience with these words,

> It always made me in a good mood to be outside...it was my surroundings. It was slightly different there [Lighthouse Park] than any other place. I was closer to the scene.

Although Elizabeth made no mention of her map, being conscious of a special feeling about her surroundings is a major factor in establishing an effective triadic relationship of map, terrain and self as required in a navigational endeavour.

Cynthia and John seem to sense the importance of map reading ability in an activity such as orienteering. However, it is doubtful how well they connected this fact with an ability to be environmentally aware of their surroundings. As novice orienteers, they could see the relevance of each, but had not as yet forged a firm link between these two indispensable dimensions of orienteering. As Cynthia explained,

> I haven't done much map reading before, but I have been hiking with my mother in the woods. I sort of feel comfortable having been in the outdoors before.

Feeling comfortable in the outdoors is an important first step towards being environmentally aware. To feel good in a locality counters a natural apprehension towards the unknown and results in a more relaxed attitude and specific notice of surroundings is taken. When Cynthia was introduced to an orienteering map, she was able to make some definite relationships through use of her mental map. Cynthia had experienced trails, streams and undulations of a forested environment on previous occasions and could more easily make a transition between a diagramatic form of a map and the three dimensional reality of a natural outdoor setting.

John made more practical use of the map as he described the following experience,

> When we got to Lighthouse Park, I needed a map to see which trail you were on. I looked at the map ten times more than I would have if we were still in the University Endowment Lands... The map could tell a lot, like which trail to turn off. You look at the map and see the next control [flag] is by an open area. So you look out for this feature as you now know where the control is located. You run. When you get there, you then look back at the map to see in which part of the open area you will find the control.

John demonstrated a clear understanding of how he made effective use of his map. His "looking was seeing", as Franck (1973) suggested, so his description carefully recounts the mechanics of being oriented by means of making visual contact with his map and surroundings. John expressed a need for a map to assist him in this process, particularly since Lighthouse Park was an unknown area to him while the University Endowment Lands were adjacent to the school and therefore a familiar area to most students.

Sharing a Mutual Environmental Experience

After any event orienteers immediately seek out another who has participated at the same level of competition with whom to share their recent navigational and environmental experiences. With a map providing the context for dialogue, a mutual exchange of experiences is shared by each orienteer. They reveal these encounters through re-living the sequence of environmental events that occurred in an indirectly shared unknown outdoor setting. The students after their first time cross country orienteering event in Lighthouse Park cheerfully shared some of the navigational encounters that they had experienced during the afternoon, with animated conversation and with frequent reference to their maps.

Jack an experienced orienteer acknowledged the occurrence of this dialogue in the following way, "Orienteering is the people you meet who occupy the land you temporarily share." Here, Jack suggested that although orienteering is essentially an individual sport, there is a need to share the experience with another. A sharing of environmental interactions so recently experienced by each, yet independent of the other is part of the orienteering encounter. Judy, a seasoned competitor, provided a rich portrayal of the scene after the finish line has been reached,

> Thankfully, I sprawl on the grass... I am surrounded by chatter...everyone looks sweaty, dirty, and dishevelled but happy...reliving our orienteering experiences while it is still fresh and vivid. Maps are returned...with heads inclined together, the course is retraced and we relive it again.

It is with feeling of exhilaration tingled with relief that a course is finally completed. Each orienteer has been through a direct encounter with his/her surroundings as an individual and now there is a need to

share these recent environmental encounters with other orienteers. Some "post-mortem" discussions focus entirely on sensual environmental experiences as described by Judy,

> The woods are beautiful, sunshine glints through the leaves and the air is fresh...the ground is mossy in places, feels nice to run...a sudden crashing in the undergrowth nearby, I am startled and thrilled to see two white-tail deer bobbing away. Beautiful, graceful animals, they hardly seem to touch the ground as they run. For a few seconds, I feel that I am running with them.

Each orienteer can relate to such a moment because he/she has experienced the encountering of wildlife in their natural habitat. "For a few seconds, I feel that I am running with them" is a vivid statement shared by Judy in that it suggested a respect for these traveling animals; in this case, a pair of fleet-footed deer that gave the appearance of bounding effortlessly through the forest. As human beings unable to duplicate a similar mode of travel, this visual experience inspires perseverance to travel with greater speed and determination. Yet, there may be a twinge of envy accompanied by admiration for these sure footed creatures. They run with such grace there is no way that any human being could travel through the forested terrain as efficiently. Orienteers are unable to share the animal's forested home, yet they have become temporary "invaders" momentarily shattering the peaceful tranquility of a forest scene. These incidents are personal. It is always easier to reveal these particular moments with another who shares a similar environmental attitude and respect for nature. The appeal of the sport is that orienteers do truly experience their environment, in this case a natural outdoor setting. However, there is another perspective as Judy confided,

> Why am I doing this? Why spend a perfectly gorgeous day doing this, when I could be lounging by a pool or something.

Orienteers have all questioned their rationality on similar occasions when way-finding ability has been ineffectual in resolving navigational dilemmas. To share experiences in the forested environment provides some needed rationality to recent action. Mutual sharing of these environmental encounters is beneficial in the release of feelings and tensions of competition, wherein, each orienteer gains greater depth in personal understanding of his/her relationship with the environment. Reflection occurs after experience, with time to think back to events just happened. It is through this re-living that orienteers are able to acknowledge the environment in a very concrete way.—The orienteering map serves as a means to recall recent environmental experiences into a re-living for each individual. The map serves as the initiator of these environmental reflections for orienteers of all levels of experience.

Environmental Appreciation: Oneness With Nature

Orienteers gain an appreciation for all outdoor settings, otherwise it would be meaningless to be involved in an environmentally based activity/sport which demands participation in all types of weather and during most seasons of the year.

The novice orienteers, Cynthia and John, expressed their environmental appreciation from their differing points of view. Cynthia indicated her liking for evergreen trees and her preference for the forested area adjacent to the school for a specific reason when she said, "I like this area because of the big trees." The intensity of a forest makes an impact upon the receptive individual. John was more general in his reaction to his recent environmental experiences by saying, "I ran through the woods enjoying the scenery." He suggested that to his rate

of travel he was able to appreciate the scenery. This comment reflected his newly acquired navigational expertise, as his map reading skills and environmental interpretation would each determine the level of awareness to his surroundings. Conversely, Cynthia's speed did not prevent her from being aware of her surroundings. In both instances, these young orienteers readily admitted to a level of environmental interaction that would relate to how successful they had been in solving navigational challenges of a good orienteering course. When previous environmental encounters serve as an endorsement for potential interactions with a natural environment, then reflection is important to future orienteering experiences.

Judy and Jack have orienteered for many years. They expressed their feelings of "oneness with nature" in different ways. Judy suggested that "the sensation of oneness with nature is distracting and I have to force my mind back to its task." This was not to say that she disregarded the moment because it was not important. However, in a competitive orienteering situation, each individual is running against the clock. Standing still to admire the surroundings for any length of time would not assist in gaining a good result on course completion. Yet this factor does not detract Judy from a total environmental experience as she orienteers. Jack provided a summary of key words and phrases that for him represent a oneness with nature or the aesthetic dimension of orienteering:

- sudden cold shock of dew and rain soaked brushes
- grasslands and forests
- smells and sights
- puff balls and deer

- mayflowers and skunk cabbage
- pines and bulrushes
- dry hills and wet marshes
- silence
- taste of wild berries, leaves and fruit
- brambles and nettles
- cool water, streams and ponds
- soft silent pine needles underfoot
- carpets of crackling dry leaves
- vast pallets of fall colours and spring greens
- long grass clutching at feet and legs
- pungent smells of swamps and beaver ponds.

Orienteers who have experienced a natural outdoor environment will relate to most or all of the above "components" of nature. However, most orienteers have experienced these situations on many occasions and in several different combinations throughout their orienteering careers. Where else and by what other means may nature be so spontaneous? The impact of nature upon an orienteering experience is an undeniable fact. It is virtually impossible to travel untouched through a natural outdoor setting of the forest. It is through touching that environmental interaction is experienced. Lawrence (1960) supported this concept with an insightful description of "trees that have no hands, faces or eyes." He suggested a tree cannot be experienced by looking at it; it has to be touched to permit involvement with the tree. The orienteering experience represents an ability to touch and be touched, more particularly, to knowingly perceive nature as it is vividly represented in any natural outdoor setting that all orienteers encounter. With novice orienteers

this experience initially can be a unique revealing of their potential environmental interaction.

Being Changed by the Environment

It is without a doubt that an orienteering experience allows orienteers to develop an attitude towards the environment they may not have previously acknowledged. A respectful disposition is developed that generates an increased awareness towards one's surroundings. This "dialogue" with the environment does not proceed from the premise that there is need to always control, but rather the experience of a temporary relinquishing of any feelings of superiority. In so doing, an interactive mode with one's surroundings is established where reassessment of previously adhered to environmental values is experienced. Reassessment is a consistent factor throughout any environmental interaction. Without a challenge of the unknown, orienteering would lose its unique identity of being a vigorous physical activity requiring an intense level of mental stimulation. Orienteering needs a context and this is preferably an outdoor setting. It would be safe to assume that without surroundings, in this case the natural environment, the activity of orienteering would be an unrealistic endeavour.

The Grade 11 students were asked to keep an environmental data journal for one week. In familiar surroundings it was people (family and friends) that were remembered; however, in going to an unknown place, it was the new setting that was readily recalled. Orienteers are usually participating in an unknown area, and later are able to vividly recall their surroundings. This is not solely due to unfamiliarity of the area, but to the nature of orienteering activity where a map is used to provide a picture of the environment.

Orienteers are changed by their environment. Their ability to be adaptive to immediate surroundings, combined with a capacity to change the setting itself to better suit their purposes must be held in tension. It is one's responsibility to maintain an effective balance in orienteering, where the interaction is exciting, unpredictable and current. Orienteers need their navigational skills to fulfill any environmental expectations.

Bob, an accomplished orienteer, described the environmental task that challenges each orienteer, in the following way,

> A successful orienteer must be completely absorbed in the terrain, its shapes, its surface, what's ahead, behind and to each side. A product of this reading of our environment can be an exceptional sensual extension of vision, a feeling as if we were seeing the woods for the first time and wanted to see and feel as much as possible, being drawn closer and closer to it.

How can orienteers not be changed, if Bob can vividly describe such an experience so surely felt and powerfully portrayed? Nature impacts upon each individual and he/she is changed by the interaction with a natural outdoor environment.

Nature is inescapable in every natural outdoor setting as expressed by Muir (1938),

> This grand show is eternal. It is always sunrise somewhere; the dew is never dried at once; a shower is forever falling; vapour is ever rising. Eternal sunrise, eternal sunset, eternal down and glowing, on sea and continents and islands, each in its turn, as the round earth rolls. (p. 13)

Orienteers experience nature through their senses while orienteering. It is impossible to traverse through a wooded marshy swamp without being part of a total experience. This continuous encounter with nature is a predominant characteristic of orienteering activity, as each orienteer is subjected to whatever natural obstructions that may restrict forward

progress. Knowledge about one's surroundings as evidenced from the map, directly relates to understandings about quality of communication and caring for the environment and enhance recognition of nature's power.

Novice orienteers Cynthia and John, with the rest of their class, did not allow themselves to totally experience nature; but a "comfort zone" was created where they initially tried out their newly acquired skills within known conditions before testing out their full potential. A first time confrontation with an unknown outdoor forested setting can be an unnerving experience. Hence, their environmental experiences were limited to a more practical level of interaction. Immediate surroundings were carefully observed, but generally not adequately, to permit sufficient impact for true environmental appreciation. At this level of limited navigational experience, it would not have been appropriate to have these novice participants orienteer for the first time in inclement weather and poor ground conditions.

To enhance any environmental experience, a realization of the power of nature is essential. Thus, as orienteering experience is accumulated in a wide range of different natural outdoor settings, Bob, an accomplished orienteer, was able to describe his environmental experiences as follows,

> In orienteering, there are many places you would not go to by pure choice, but once upon the site, you find yourself in awe of its character and uniqueness.

He continued,

> There are many features you would never find from the trail, an unusually twisted tree or a deer bedding area. Simply, there is so much to see off the trail in the mysterious areas between trails.

He summarized his thoughts,

> Within each orienteer, thoughts will remain of the dark and misty hemlock stand, the pungent smell of spring skunk cabbage, the steep sided re-entrant and cattail marsh. These are rare and wonderful moments of intimacy with nature, intertwined within the challenge of the activity, created by its intensity... Orienteering and my map are a gateaway to the heart of the woodlot, parkland and forest environment.

This is a lucid description of the natural world as seen through the eyes of this experienced orienteer. In nature, an apparent stability of all things is dependent upon diversity, where everything is becoming. This complex community of which we are an integral part demands our active participation. Santayana (1955) expressed that, "Beauty is an emotional element, a pleasure of ours which, nevertheless, we regard as a quality of things". (p. 30) Thus, the orienteer's relationship with nature in the context of orienteering is dependent upon the human qualities within the personality of each individual. This is the inner experience of orienteering.

Environmental Knowledge: Naming Nature

> Do not try to satisfy your vanity by teaching a great many things. Awaken people's curiosity. It is enough to open minds; do not overload them. Put there just a spark. If there is some good inflammable stuff, it will catch fire. (Anatole France, 1983, p. 112)

Acquisition of environmental knowledge has a tendency to imply naming of things rather than experience. In orienteering activity, this "naming" occurs at two particular levels namely, technical and sensual. Maps are an integral part of orienteering experience. In order to make effective use of a map in order to be successful navigators, it is necessary to learn map symbols. These symbols facilitate recognition of the features they represent in a natural outdoor environment. Thus, naming of features through learning map symbols is an important aspect of

technical (navigational) skill. Novice orienteers need time and a variety of learning contexts to understand the concept and apply the appropriate skills in their navigational endeavours. The environment, in the context of orienteering, is the dominant and determining factor that tests ability and influences all decisions.

Oliver was the only student who briefly experienced cross-country orienteering. Here he shared some of his environmental impressions and a little of himself in so doing,

> The best part of orienteering was being outdoors on a beautiful day. The wooded area was more fun because its obstacles [features] were bigger and unknown to me. The rock face wasn't as big as it showed on the map, it was only about 100 feet high! I did not know there was the ocean and I spent a while looking at it.

He was off on his own, traversing through a wooded area with several steep cliffs around which he had to negotiate. His speed of travel was consequently slowed, but he had cheerfully accepted the challenge of the unknown. Whether the successful outcome of this personal endeavour would have been the same in less favourable conditions, it is hard to say. However, Oliver took the direct route through an unknown environment and experienced the essence of orienteering that is knowledge of self in relation to way finding through an unknown environment. He reinforced his own knowledge about himself in a physical way, but also had time to criticize the map (not an entirely accurate assessment) and to pause to appreciate his surroundings. These are all essential attributes to an orienteering experience.

To totally experience the environment through orienteering participation is to integrate physical action and intellectual capacity in response to the demands of environmental challenges within the limitations of one's unique and individual personality. To participate

is to learn and be revitalized by environmental experiences. For each orienteer, this integrative process is ongoing throughout orienteering.

An experienced orienteer is able to memorize a sequence of symbols from the map and then to identify them in the same order in reality, while running at speed through the unknown area represented on the map. Ross, a member of the Canadian national squad, described the level of concentration required to make instant connection between map symbol and natural feature when travelling on foot at speed in saying,

> My chain of thought is a stream of ideas in the form of a conversation with myself, along the lines of, 'Okay, along this path for 200 metres there will be a gully coming in on the left. What is it going to look like at the control? Okay, two small knolls. I want the northern most one. Great! there's that gully; now, cut in here for 50 metres. Oops! What's that? A marsh! Okay, I've drifted too far south. No problem, just turn a bit to compensate.

This "running commentary" in a literal sense was shared by a highly motivated and competitive individual who has the ability to concentrate in order to interpret map symbols in relation to natural features, the linking of map and terrain. The vital connection must be executed with speed and accuracy. However, Ross does concede that although his technical skills are predominant while orienteering, there are other moments that are part of his total experience,

> An unrelated emotion is the feeling of exhilaration, when I suddenly see a good view.

Ross suggested that at the elite level of competition, instantaneous recognition of his surroundings was important in effective implementation of technical skills. He continued by stating that there is a tension between focused concentration and a momentary pause to reflect upon nature, as dramatically displayed in his immediate environment at a particular moment in time during a competition. Although time is the

ultimate test in successful course completion, the orienteer cannot accomplish this goal without establishing a direct relationship with his/her surroundings.

The second dimension of experiencing the sensual domain of nature is less tangible. Each orienteer is endowed with an ability to use his/her senses. During orienteering participation, it is virtually impossible not to experience a forested environment through all the senses. It is part of the orienteering experience. Environmental incidents and feelings about them are shared with other individuals after course completion. Although awe of nature is not confined to natural outdoor surroundings, it is these settings that are most likely to inspire a sense of wonderment about nature, and "naming" of this interaction does not detract from the initial experience within the context of orienteering.

Human Qualities of Environmental Experience

Orienteers are indirectly environmentalists. An ability to enjoy, share and be concerned for a dynamic natural world is a mutually held value among orienteers. Appreciation of diminishing non-renewable resources is also a concern. Several studies have shown that environmental damage is minimal even after a large international five-day orienteering event with several thousand participants. Thus, orienteers truly value their environment and cannot fail to become excited when nature is experienced in all its diversity. Each orienteer has many personal qualities that are brought into his/her orienteering participation. Feelings are expressed through a sense of humility to the awesome grandeur and power of nature as is experienced in a natural outdoor setting.

Each participant is searching and this "self search" goes on throughout every orienteering encounter. Although technical/navigational skills are used to negotiate natural obstacles that challenge progress during the course, pleasure derived from an outdoor environment is more often a search to find oneself within the complexity of a modern existence. This could be considered as the inner dimension of orienteering.

Nature cannot be easily cheated. If this is tried, then it is the orienteer that suffers the consequences of his/her actions. There is a basic honesty in appreciation of one's surroundings, as there is integrity of intention to complete the course in the correct sequence, even when confrontation with nature requires navigational decisions. It is a good feeling inside to have successfully met the challenge as Berry (1970) suggested in this way,

> And the world cannot be discovered by a journey of miles, no matter how long, but only by a spiritual journey, a journey of one inch, very ardious and humbling and joyful, by which we arrive at the ground at our feet and learn to be at home. (p. 181)

In some measure, orienteering takes orienteers back to their roots, standards and basic concepts of life. Jack, an experienced orienteer, shared his thoughts about the historicality of orienteering when he said,

> Orienteering is to periodically enter into the past. To wonder upon encountering an old ruin, how the people lived and shared and worked the old farmstead or mill. Who was here before? What did they do? What became of them? Who built the stone walls, homes and barns? Who planted the orchards? Part and parcel of orienteering is the knowledge that you are able to come down closer to your roots, to almost make contact with ancestral ways, even though you live in a modern society replete with ways to make life easy. A society which offers no challenge to personal survival, a society which moves further and further from a natural way of life.

To travel through an environment, as in the activity/sport of orienteering, allows orienteers to use many human qualities. They become attuned to both beauty and power of nature. Intense physical exertion and test of intellectual ability are focused into using navigational skills to meet the challenges of the environmental endeavour. In fulfillment of the ultimate goal, a successful completion of the course, all orienteers find new meaning in themselves and their natural world,

> The greatest beauty is organic wholeness, the wholeness of life and things. The divine beauty of the universe. Love that, not man apart from that. (Jeffers, 1983, p. 136)

Orienteering as an environmentally based activity challenges all orienteers to become more attuned with their surroundings, while recognizing the different environmental impact that is experienced by each individual. The sport of orienteering, by its competitive structure, acknowledges the unique needs of each participant and this factor is reflected in the multiple levels of competition that are available to all orienteers who select the length and difficulty of the course according to their age and experience. Consequently, the environmental dimension of the sport is experienced in different ways by each orienteer regardless of their level of competition. However, with novice participants, it is necessary to encourage a more conscious environmental interaction to ensure a more meaningful and successful orienteering experience.

CHAPTER 10: REFLECTIONS

Introduction:

> Let the fields and running streams in the vales
> please me; unknown to fame, let me love the rivers
> and the woods (Virgil's Georgics, II, 485-486).

Now I am able to pause and reflect on the study question as revealed through the thematic analysis, the methodological stance that facilitated the student responses and the significance of teaching outdoors in a setting that provided an environmental challenge. In addition, I acknowledge the integrative characteristics of orienteering within the school curriculum and suggest a number of directions for the future. And there is always a final word.

The question posed to a Grade 11 class was an attempt to reveal the essence of the orienteering experience through the eyes of novice participants. This study was based on the stories that these students provided in response to the researcher's question "What is it like to orienteer as a novice?"

The reflections on their navigational experience were revealed through extensive personal descriptions that constituted a major portion of the six analysis chapters. Each theme focused on a particular dimension of orienteering as experienced by the students and served as a catalyst to reveal a more comprehensive understanding of what it was like to orienteer as a novice participant.

Reflection on the Themes

The "fear of being lost" emerged as an important component in the

"Navigation" theme. The students, with initially limited background, gradually were less hesitant as their skills were more effectively used in progressively challenging navigational situations. The joy of orienteering, as George (1987) suggested, "lies in losing yourself in the forest as opposed to getting lost" (p. 21). The "Physicality" theme reinforced the fact that running is the only physical skill of an orienteering experience. The students began to experience the importance of fitness in relation to physical mobility and more importantly, they liked the idea of running for a purpose in orienteering. The "Awareness of Self: Individuality" theme was portrayed by the students through an emphasis upon independent navigation while traveling alone in an unknown forested environment. Successful course completion was dependent upon overcoming feelings of self doubt and recognizing an ability to make sound navigational decisions under pressure.

The "Competition Within Participation" theme provided some interesting insights as it was suggested that "setting goals", "going at own pace" and "experiencing a sense of accomplishment" from individual endeavours were important in the navigational activity of orienteering. The students responded favourably to the challenge of self before comparison with others which is the philosophical stance of orienteering. In the "Time and Space Relationship" theme, the relevance of time to these novice participants appeared to be reflected initially in speed of travel and fast course completion. Another interesting dimension was the different feelings of time experienced by each student and these were dependent upon the navigational problem and physical setting of the individual at a particular point in time during the event. The students' awareness of space initially impacted as the size of the forest. Distance traveled made a significant impact upon their appreciation of

space, likewise the height of trees within the forest emphasized another dimension of size in relationship to tree height and to distance travelled. Later, as a more confident relationship developed between map and surroundings, they were able to experience improved understanding of spatial concepts as these related to different types of environment and spatial patterning in nature.

The final theme was "Environmental Awareness." The students' understanding that orienteering was grounded in its own context, a natural outdoor setting, became more authentic as their relationship with map and environment developed during the orienteering unit. Their improved observational skills suggested a more conscious appreciation of being an integral part of and being changed by their surroundings.

My interpretation of student experiences was based on personal orienteering encounters and confirmed by other experienced/elite orienteers. In this way, it was hoped the essence of each student's story was authenticated through reported experiences of others in similar situations in which past navigational encounters were recalled. These stories represent the personal journey of each student on an unique navigational search into the experience of orienteering.

Learning Outcomes

It is clearly evident from the earlier discussion that the study question had made an appreciable impact upon the students. This first time encounter with orienteering permitted these novice participants to share in a personal way their experiences of the sport. Their animated responses suggested involvement reflecting the extent of learning within the experience itself and its effect upon the individual student as the instructional unit progressed. This sense of involved learning was revealed through the indirect responses to the sub-questions posed in the

study relating to skill, self and setting as the following dialogue suggests.

The initial question posed was "how did acquisition of orienteering skills impact upon novice orienteers?" Early recognition of the relevance of effective navigational techniques was evident in student activity. The entire class readily used their newly acquired skills in a sequence of navigational activities with map and compass that culminated in their active participation in the cross-country orienteering event. As more successful navigational decisions were made an increased level of confidence was evidenced. The fact that a greater acceptance of poor navigational judgement became less problematic for the students was a reflection of growth in skill learning.

The second question sought to determine the nature of self in the novice orienteering participant. The predominant response to this challenge was the realization by the students that they were able to be self reliant and not dependent upon others to resolve navigational dilemmas. Their experience of being alone revealed that for some students it was the first time they had had a truly personal encounter with themselves. Others found they had an innate natural affinity for being in a natural landscape with a conscious realization of that setting. To go orienteering was recognized as a self learning experience by the students and this was verified through the sharing of such feelings as the joy of moving, the thrill of seeing their surroundings in a new way or knowingly taking a navigational risk. However, it was the unique concept of "doing first and comparing self with others later" that provided a powerful affirmation as to the true nature of orienteering to the students after following their first time orienteering competition.

The final question asked "what were the novice orienteers aware of in natural outdoor settings?" Initially, it was discovered that the student participants had a general level of environmental awareness. However, in unfamiliar settings, more attention was given to specific details to facilitate particular navigational endeavours. All students recognized the need to establish a more personal relationship with their surroundings as an important factor to assist in mobility through a forested environment. Some students were generally more aware of the setting than others, but most commented on the "nature" dimension of their orienteering experience. The students had experienced orienteering in a semi-wilderness area and Mills (1987) pointed out, "wilderness is a learning place, an educational environment of unique and significant potential" (p. 39).

The relevance of student learning within a novice orienteering experience is summarized under three broad headings. The psychomotor dimension of this activity suggested that learning occurred through the physical experience of running, but more specifically learning to travel at one's own pace as an individual. A conscious awareness of his/her physical self as each student negotiated a route across different terrain was evidence of learning a specialized running style and level of personal fitness. Cognitive learning in orienteering was expressed by the fact that there was a specific purpose to their traveling search. The necessity for concentration and careful thought in enabling sound decisions to be made was recognition that these same decisions could be accomplished under pressure and independently of others. Acquisition of navigational skills encouraged a more conscious triangular relationship of self, map and setting. A sense of accomplishment having recognized one's individual limitations allowed each student to feel good about the

challenge of self in action. Appreciation of a natural environment required a basic honesty by each individual, thus the students acknowledged outdoor settings to be a vital part of their orienteering experience. Similarly, the students learned that it was their navigational encounter which came first before any comparison with others. Thus, recognition of the physical, intellectual and emotional components within an orienteering experience provided a basis for meaningful learning by each novice participant.

Methodological Stance

How to gather the best response to the study question was a critical factor in selecting case study as the most appropriate methodological approach. During the time that I spent in the school as a participant observer, it was important to create an atmosphere whereby the students were encouraged to express their understanding of and feelings about their recent navigational experiences. In this case study a specific question was posed to the students: "What is it like to orienteer as a novice?" It was recognized that individual differences were reflected in each description and when integrated with others would result in a recounting of the total orienteering experience; thus, the students' responses as suggested by Merriam (1985) were central in capturing a holistic interpretation of this phenomenon.

Orienteering is one of the lesser known activities, therefore, it is not surprising that available research literature was limited. Consequently, the literature review was specifically confined to the sport of orienteering. However, during the search process it was discovered that there was minimal research in the area of instruction. Only four studies were located and none of these were completed in Canada. This school based study focused on student learning and should

contribute to the current literature. It is hoped that accessibility to world wide data will be improved with computerized translation facilities, so that researchers will have more opportunity to access data in particular areas of research with a European origin, as in the case of orienteering. The study of orienteering as an environmentally based activity is beginning to appear in the divergent area of environmental research. Orienteering epitomizes the environmental dimension of an outdoor experience. It is the outdoor setting that provides the starting point in the understanding of physical activity and navigational skill as experienced in orienteering by the novice participants in this study.

Significance of Teaching Outdoors

Being in a natural outdoor setting is a different experience for each individual. There is a feeling of uncertainty reflecting a sense of the unpredictable that nature inspires and it is difficult to remain untouched by the natural world. The environment means "everything" according to Lutts (1985) and there is no separation between self and surroundings. It was a unique encounter for students to be physically active in the outdoors as they experienced orienteering, an environmentally based sport. Moreover, if a sport is "grounded" in an outside setting then that is where it should be experienced.

Perspectives change in the outdoors. Questions arose because the students were experiencing an outdoor environment. Students began to think about what they could see, hear and touch. Knowledge was not imposed by the teacher who served as a catalyst but rather learning was experienced through the senses in conjunction with factual information (Callicott, 1983). It was this interaction between students and their surroundings that represented the dynamic environmental quality of an orienteering experience. Traveling on foot through a natural landscape

was more than a physical endeavour. It was fusing the sensual and intellectual with the physical that contributed to a total environmental encounter within the sport of orienteering, thus as Rejeski (1982) expressed, "our knowledge of the environment is mediated by our experiences" (p. 38).

There is a sense of informality in the outdoors, being absorbed by the setting, wherein students and teacher together are able to explore the natural world about them. This mutual sharing was particularly important in the teaching of orienteering. The students were separated from one another in a forest setting and traveled and learned as individuals in order to resolve navigational problems of an orienteering event. Learning becomes more meaningful when teachers encourage questioning, self-discovery and problem solving that permit students to consciously find themselves within the intricate network of nature. Orienteering, as a navigational enterprise, incorporates the dimensions of skill, self and setting into a unified learning encounter that constitutes a total environmental and educational experience. Finally, it was important for each novice participant to capture the "magic" of a forested environment when orienteering.

Future Directions

This case study about orienteering is the first of its type in Canada. As school based research, its general focus was on student learning in outdoor settings. More research is needed in several areas that specifically relate to environmentally based activity: identification of the most creatively productive teaching methods to use in an outdoor environment; exploration of the problems and concerns of teachers that prevent the provision of effective instruction in the most appropriate settings; development of teaching strategies that incorporate

consistent questioning of learners while circumventing unfounded assumptions by teachers of how learners feel about the learning environment; the development of programs of holistic experiences, particularly at the secondary level of schooling, that incorporate the unseen curricula such as identified by Parry (1976).

The interdisciplinary quality of orienteering within the curriculum appears to be a comparatively unexplored domain, which is surprising, since navigation is part of everyday living. Even more valuable research could probe the potential of life-time skills as utilized in activities such as orienteering.

A Final Word...

This study set out to respond to the question "What is it like to orienteer?" In so doing, orienteering has been described as an integrative experience in which individuals engage in physical activity in an outdoor setting. Each of these components, the individual, a physical activity and an outdoor setting may be considered as a separate entity. But, by bringing the three dimensions together, it has been possible to describe orienteering as a holistic experience through the eyes of novice participants. It is remarkable that this encounter could be responsible for such insightful comments through the personal reflections of these young people. Perhaps, it is because, as Deval (1985) suggested "adolescents need to take risks in natural settings (and) to have long periods of solitude..." (p. 2). These two elements are certainly present in orienteering. It is evident that these reflections effectively illuminate the essence of navigational experiences through rich and vivid descriptions: an orienteering story was powerfully told by its novice participants. What are words? It is the meaning behind them that imparts the message...

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Appendix A

Student Writing: Outdoor Play Space

A. Cynthia

Like a tiny grave, quiet and secretive, me and my friends often came here to play. So many different kinds of plants and trees that I can hardly remember their names, so we made them up instead. There were firs, cedars, pine, ferns, boysenberries and the tiny red ones we knew were poison, Witch's Berry. The soft earthly ground was my plush carpet and the tall bark covered pillars held up the sky, my ceiling. Lying on a bed of moss green shoots, I was able to dream anything ... the natural freeness let my mind wander. The remains of our special fort we built was there: logs and plants that we found on the forest floor, covered by woven leaves and a handful of ferns. It leaned against a huge rock, a rock so big that we sometimes pretended it was our "Almighty Wise Man" whom we came to seek advice. Light filtered in through the cracks in the walls reminded me of the outside world. There was nothing like our secret enclosure. But the chilled darkness had set in and it was time to return to the more angular, rectangular part of life.

B. John

When I was little I used to play in the forest behind my house. In the middle was a little water hole which was sometimes dry. I used to put logs in and cover the hole up. The forest was an interesting place. Parts of it were really dense with shrubbery and fallen down trees and other parts were clear with the blue sky lighting up the clearing. Some parts were clear on the bottom, but there were so many trees, it was nice

and cool. Huckleberry bushes were all over the place and you had to be careful of the bees' nests. A few years ago, they cut a section of the forest so now there is a big clearing full of grass and clover. Bit by bit they are tearing down the forest and putting in other stuff like a bike path and a park. These things are nice especially the park, but it's not the same as the forest.

Appendix B

Student Journal Writing: Environmental Encounters

A. Don

#1 - Rain

Wet, cold, gloomy, dark, can't put wet hands in coat pocket to warm up, nowhere is dry, rivers on pavement, ceaseless.

#2 - Granville

Really dirty, noisy, grey, litter, weird people, bus never comes to take me away soon enough, when bus comes, it's always crowded, not a good place for a xenophobe.

#3 - Forest

Peaceful, green, quiet, all sounds seem to disappear, funerals are more noisy. Drawback: muddy when wet.

#4 - Mud

Why do I have to play soccer in it? Swamp gas, makes interesting squishing noises, slippery, possessed by a demon that enjoys making people, slip, fall, smell.

#5 - Classroom

Boring! Lighting: flourescent, flickery, dark and light at the same time, sickly. Writing on desks, always someone talking. Blah.

#6 - Bus

Noisy, crowded, dusty, seats aren't comfortable or even tolerable - they get slightly muddy on wet days, drivers are always lousy, busses jerk about when they move.

#7 - Frost

Cold, gets on shoes like snow might, freezes up mud and puddles, does weird things to moss underfoot, many things make cracking noises when frozen or frosted.

B. Sally

Friday November 25th

Today, possible for the first time in my life, the sun had a great influence on my feeling of well-being. I can't remember a time when the rain has had such terrible effect on me mentally. For the past rain-filled week, I have been getting more and more depressed. This morning's sun has definitely lifted my feelings.

Saturday, November 26th

I went out for dinner and to movie tonight with my friend. I often think that I don't really need other people in my life, people other than my family and very close friends. Tonight I realized that it can be fun and it probably is important to be in a group of people occasionally, even if you don't come into personal contact with them.

Sunday November 27th

Sometimes, odors, lights, sounds and pressures in the air can have a very adverse effect on me. Smells like cigarette smoke, poorly conditioned air, strong chemicals such as ammonia, sounds that are continuous such as the T.V., a car fan, screaming in the hall, and air pressures such as that found in an underground shopping mall all cause me to have severe tension headaches and sometimes stomach aches. Extremes of heat and occasionally cold also sometimes make me feel sick, or even hysterical. I don't know if there is something wrong with me but I am very susceptable to stressful situations in my environment. Conversely, situations like cool, quiet, windy days can have a very soothing effect.

Monday, November 28th

Today is a beautiful day but very cold. Once again, my spirits are high. Everything is crisp and clear. Weather like this effects me in a very positive way.

Tuesday, November 29th

Today, when I came home from school, the house was a mess and smelled very strongly of cigarettes. This made me very angry because I can't stand it when other people (my sister) mess up the place I live in. I also strongly dislike the smell of cigarette smoke, and as my sister smokes I have to put up with that almost every day. I don't think I can do anything about it, my sister isn't going to change her ways to suit me, but maybe if I refuse to let it bother me so much it won't be such a problem.

Wednesday, November 30th

My mother bought a T.V. about a month ago. Ever since then, it's been on every night and I've become far less productive. Either there's something good on T.V. and I end up watching it or my mother and sister have the T.V. on and it's so distracting that I can't concentrate on anything else, namely homework.

Thursday, December 1st

When I come home from school and find my cat ready to cuddle, it often makes me feel better. I have read that pets can have a therapeutic effect on stress level. I certainly believe that.

Appendix C

Time-Line of School Visits

August	24	1983	First visit to school and meeting with Hank (P.E. teacher).
September	23		First meeting with principal.
		*	Approval sought and granted by UBC and VSB for study.
October	3		First meeting with Grade 11 students.
	13		Assigned "Describe an outdoor play-space" paper.
	17		Students completed Tennis/Badminton and small group discussions on their papers.
	18		Hiking trip in Cypress Bowl Provincial Park.
	20		Students involved in Fitness testing program allowing for further small group discussions.
	25		Continuation of Fitness testing and group discussions.
	26		U.B.C. track: 12-minute mile.
	28		Soccer unit begins.
November	2		Soccer unit continues. Students given a small notebook each to keep a journal for one week and record conscious interactions with immediate surroundings.
	3		Soccer game in pouring rain!
		*	One week SCHOOLS STRIKE.
	15		Continuation of soccer unit.
	23		Cross-country run - UEL.
		*	City closed ALL playing fields resulting in re-organization of Grade 11 P.E. program.
	25		Small group discussion (taped) relating to their journal writing.
December	1		Hank absent - no school visit.
	5		Continuation of small group discussions.
	9		Curling at Winter Sport Centre, UBC campus.
	12		Cross-country ski trip - Hollyburn Mountain.
	14		Completed small group discussions.
January	23	1984	Hank and I discussed the revised P.E. schedule. It was decided that the orienteering unit was to begin on February 27th and continue for ten lessons.
	27		Archery unit begins. Hank provided me with an updated schedule and advised that the orienteering unit should begin on March 2nd due to a two-week break in the middle of the unit because of the school's spring break and my attendance at the AAHERD in Anaheim, California. Asked students if anyone would be willing to redraw campus map and Walter volunteered.
	30		Archery unit continues.
February	1		Continuation of Archery unit. Was provided an opportunity to talk to small groups of students.
	6		Archery unit and group discussion continue.
	7		Supervised Archery class today (Hank away at City Wrestling competition).
	9		Conclusion of Archery unit.
		*	Swimming unit during noon hours for next three weeks (will not be in attendance due to my practicum supervision of student teachers).
March	2		Orienteering unit begins (see unit plan for details).
	9		"

March	2	Orienteering unit begins (see unit plan for details).
	9	"
	12	"
	14	"
	26	"
April	4	"
	5	"
	9	"
	12	"
	17	Cross-country orienteering event in Lighthouse Park. Assigned 2-page paper on their orienteering experiences.
	24	Collected student papers and "debriefing" after orienteering unit.
	27	Arrangement of interviews after school during next month (selection of 12 students on basis of their descriptive writing).
May	7	Rock climbing field trip to Murin Lake and visited Evans Lake O.E. Centre. Class group divided on basis of my interview selection.
	9	Six interview with students in pairs.
	14	"
	18	"
	19	"
	22	"
	30	"
September	6	Visited school to arrange with Hank re: follow-up student interviews.
	14	Arrived unavoidably late at school and Hank had dismissed the students!
	19	Meeting with students. All present except one girl had changed schools.
	26	Interview with students.
	28	"
	29	"
October	3	Interview with students.
	10	"
	12	"

September	6	1985	Meet with Hank re taking photographs of students
	12		Taking action shots of students (UEL)
	20		" " " " " "

* External factors indirectly effecting study.

APPENDIX D

Sample from Field Notes

Session #1

Hank absent due to knee surgery. We were in the typing room and it was last lesson on Friday afternoon. All class were there except one girl, who was absent which was very good! I introduced the sport by relating getting from place to place with a mental map in a familiar environment to ability to read a map to assist in the same way in an unknown environment. Related skills of orienteering to map reading and finding your own way. (We watched a film "What Makes Them Run" and a good discussion followed.) Hopefully, "planted some seeds of interest" but reassured them that every orienteer goes at his/her own pace in an orienteering event.

Session #3

It had rained all morning but fortunately cleared up at noon with patches of blue sky and pale sunshine (I had even planned an indoor session just in case!) Several students were not in class today? Hank was quite annoyed and told them so! Also, they were firmly told that it would be necessary for them to change for the 'O' unit because they would be actively involved during at least half the period. Students were partnered up and we went outside across playing fields... damp under foot! Most had a good run as the trails were in fairly good condition despite the heavy rainfall of the morning. I think the students felt pretty good about their first time with a map in a forested environment. I felt good.

Session #5

Schools Spring Break was last week, so I had not seen the group for ten days. All but two of the students were present. Hank is away all week. I felt kind of pleased as no substitute was in today for Hank. I am really enjoying them as I get to know them better. It was a glorious spring day, sunny and quite warm outside, even though in the UEL it was quite damp under foot (i.e., muddy in spots). Different students led the way, all had maps in cases and endeavoured to use the map reading on thumb technique. Pace of the group varied from fellows racing off and girls taking it more slowly, but at least we all were jogging! The group was quite successful. I am having second thoughts in a way about using the UEL because a lot of students know the trails so well.... Once again, time will tell how much they are actually internalizing. The girls are naturally more cautious in their participation, double checking with me a lot of the time. The fellows seem to want to rush through activities, most of them anyway. I wonder how much they are absorbing... I guess that I am going to find out. I think most of the students enjoyed this run in the woods. It really was alive and very green with the filtered sunshine slanting down through the lofty trees. Four girls returned a little late due to inappropriate footwear, but all reported back. I felt good after the session and hope the students are really learning the basic skills of map reading.

Session #7

Another glorious day. I spent about a 3/4 hour setting up course in UEL. I had organized a Team Relay in a clover leaf formation (3 loops returning to start location, having found two controls in a team of 2 students). This was the first occasion that I timed them, sending off 3 couples at two minute intervals. Times were combined of three runs

completed by the team of six, but unfortunately 3 couples over-ran their return route having found their two controls and ran for a further 30 minutes - bless them! The majority were pleased with their efforts. Students seemed to enjoy the experience but from the perspective of the run and not necessarily the fact that orienteering is an environmentally based activity. I felt good about the session with the students today.

Session #9

Frustration - I blew it! It has been raining hard for the past couple of days, more or less non-stop. So this morning I called in at the school about 9 a.m. to chat to Hank re postponing the outdoor session (Score 'O') today as it was "bucketing down" - so we rescheduled the session. Having made this decision, what else to do? However, my decision came too soon because by 10:15 a.m. the weather had cleared and it had stopped raining. Still windy and cool, but despite being very soggy under foot we would have gone out into the UEL! I hope that these re-arrangements will not affect my study and what kind of reaction I might have from the students. Guess I was too concerned about getting negative responses by having them participate in the rain.

Session #11

The students tumbled out of the bus, looked nervously about them and said, "I thought the park was flat!" We walked down the start area along the main trail. I allowed them to look at the map for a few minutes. My initial question was for them to locate the parking lot, to encourage them to appreciate the scale of the map (1:5000) and realize that they had walked more or less the full length of the park. Hopefully, to reassure them that although the course looked long, it was only 2.5 km. There were one or two questions but essentially they seemed fairly confident about the event. We had previously gone through the procedures

for a meet. Hank had established a starting order with girls and slower guys going first, followed by the faster and more competitive boys. Student were sent off at one minute intervals... giving them the map to look at again one minute before start time. They had all left just before the return of first student back. There were 21 students, hence the winning time was 21 minutes, which was an excellent run by Carlos. The leading girl was Jackie and all students were back within 38 minutes (the last two fellows having got lost... Peter and Bruce!)

John who had a good run this morning came in fourth, having missed the second control. They seemed pleased/satisfied with their efforts, having had a good run. Sally was pleased with her run, as she came in fourth for the girls, as she had been so nervous about getting lost. Some of them sat down and shared experiences, after catching their breath from the final dash home and up to Hank who was the timer and was kind enough to calculate the student times for me. Late-comers Bruce and Peter returned to friendly teasing from the group! I think they were relieved to get back to us. They endeavoured to save face and explained what had happened -- they had both turned to the left at the start, going in the wrong direction! When everyone was back, I handed them <u>all</u> a certificate of participation and Hank confirmed the winners as Carlos and Joan. I think they were all pleased to receive recognition of their efforts in this ten-lesson unit. Lighthouse Park is an ideal location for Orienteering at novice level. It is self-contained and rough running on the trails to make a course quite challenging even though there was no true cross-country running involved in today's event. I was pleased that I was able to set a course that everyone was able to successfully complete. It was a challenge, yet set within the limitations of the navigational skills of the students after only a ten-lesson unit. I

enjoyed being with these students as their P.E. teacher and thought that all 24 of them were a terrific bunch of youngsters. I think that it really helped having been with them since October in order to establish a trust/respect/rapport with them. They, in turn, learned about orienteering and a little about themselves, too. I hope so. I felt really happy.

Appendix E

Orienteering Unit Plan Outline

1. Introduction

   - Discussion - everyday navigation and mental maps
   - On cards - draw route from edge of campus to classroom
   - Partnerwork - partner attempts to describe route
   - Class - relate these initial activities to Orienteering
   - Film - view "What Makes Them Run?"
   - Question/answer: philosophy; environmental and competitive dimensions of the sport.

2. Map Reading

   - Introduction to maps - definition
   - Map characteristics
   - Basic map reading skills: orienting map
     map reading on thumb
   - "Do-it-yourself" Score Orienteering on school campus

3. Trail Identification Run

   - Review of map reading skills
   - Trail run with partner in UEL forest adjacent to school
   - Purpose to locate trail signs at the head of ten trails in specified area of forest

4. Review of Orienteering Maps

   - Review of map characteristics
   - Map Game: map symbol relay
   - Introduction to basic navigational techniques
   - Partners: verbal navigation/route selection

5. Navigational Techniques

   - Review of basic navigational techniques
   - Map Walk "Follow John" in UEL forest
   - Map Game: Map memory relay

6. Compass

   - Introduction to compass:
     . definition
     . parts of compass
     . taking bearing
   - Introduction to pace counting - playing field
   - Compass Game: - "Hunt the 'Silva' Dollar"
     - "Miniature Orienteering"

7. Team Relay Orienteering Event

- Review of navigational techniques
- Teams of 4
- Location: UEL Forest
- Each competitor completes a single loop of course. Times are combined to team total

8. Basic Course Setting

- Teams of 3 - provide navigational problem for another group
- Location: UEL forest
- Task: place out one control flag in an off-trail location
- Map: Identification of feature by circle and provide written description
- Exchange maps with another group, then locate control flag, use of map and compass
- Discussion: control location and route selection

9. Competitive Techniques

- Review of navigational skills:
  - . map reading
  - . compass use
  - . way-finding techniques
- Introduction to competitive techniques:
  - . competitive equipment and procedures
  - . reinforce on nature of the sport (i.e. independent navigation and no verbal contact wth others)
- Review specific protocol for Score Orienteering
- Game: Verbal navigation in groups

10. Score Orienteering

- Location: UEL forest
- Time limit of 40 minutes
- Purpose: to locate as many controls as possible within set time limit
- Running start: independent navigation

11. Cross-Country Orienteering

- Location: Lighthouse Park
- Length of course: 2.5 km.
- Timed interval start: 1 minute start times
- Course completion to gain finish time
- Presentation of participation certificates
- Review of learning: discussion

Appendix F

Sample of Reflective Writing

"Orienteering: An Outdoor Experience" by Christine

In our unit on orienteering we learned many essential factors about the sport and competition. We learned that even though you go at your own pace it is physically demanding. It is an individual sport with no verbal contact with others, and that it is satisfying and rewarding when finding the controls and completing the course.

In orienteering, the whole idea is to pace yourself according to your own capabilities. I found that when preparing for a session of orienteering I felt unmotivated and assured myself I'd walk most of the way. In fact, when actually on the trails, I felt most comfortable at a slow jog. At times, I would even catch some high motivation and find myself picking up some good speed in order to arrive at the next control in a commendable time.

Another aspect I enjoyed in orienteering was that it is set for the individual goal. Although it is a competition, you rely on nobody but yourself for results. In our trial runs I always had the comfort of other people, we could confer on our location and our destination. When actually setting off on the final course, I felt a great independence. It was a feeling of "Now I'm out here, I'd better get myself organized!" It all depends very much on yourself and I found myself more than once in solitary despair when not being able to locate a control or being unsure of a turn-off. These experiences helped build my confidence when finally locating the missing control.

and getting closer to the finish. Punching in my scorecard at each control felt like a step in the right direction, and always gave me a burst of energy to hurry on my way towards my destination.

My orienteering experience, as is evident, was one of demands in which I discovered my physical capabilities, of my endurance over the course, and my emotional capabilities of being independent of others. It was a rewarding experience in which I feel I have learned more about myself.

Appendix G

Interview Segment

Int: What is it about Lighthouse Park and a different environment were you really meaning when you said that Lighthouse Park had made a very real difference because it was an unknown area...

Caroline: Well, I think when you are orienteering in a place that you've been to several times, it's not so as challenging (voice rises in question).

Int: Hmmm...

Caroline: Because you have an idea of the landmarks, right? When we went to Lighthouse Park, well, I've never been there before and so I didn't know what to expect, and I guess it's challenging.

Int: What does the word "challenging" mean in that context?

Caroline: Like it's different, um, I wasn't really competing with anyone else but more like with myself to see if I could, you know, manage the whole...

Int: thing on your own (voice over).

Caroline: Yeh, on my own (short laugh).

Int: So you really think that even if we'd set a course in the Endowment Lands similar to the one in Lighthouse Park it wouldn't be quite the same?

Caroline: Yeh (voice over). Yeh. We'd been there several times.

Int: So what is being there several times that makes it a different experience, do you think (pause) I'm just trying

to see whether you can suggest why. Think about that one. Elizabeth?

Elizabeth: For me it's more sort of mystery. When you're in the Endowment Lands, you know that no matter where you go, you know what's on all sides of you and you know that eventually you'll turn up somewhere that is familiar to you.

Int: Yes.

Elizabeth: Now when we went to Lighthouse Park and we had the water and we were told that there were certain boundaries, and you could only go so far. But we were in the most part just running around the outside, like on especially the first part of the course and because there's all that area in the middle that is sort of around of you that you do not recognize. There's sort of a mystery. You wonder what you were going to come up to next, and where you are going to turn out if you follow the map? You know, for me it was definitely a sense of not knowing what is going to come next.

Int: It's the mystery of it. So, okay, if you're orienteering then in Lighthouse Park, how does the "familiar" relate with the "mystery"? Can we define both those?

Eizabeth: Well, if you're in somewhere that you know, you know what you're going to come up next, and ....

Int: How do you know that in the context of orienteering, how do you know?

Elizabeth: Well, you recognize various landmarks, recognize the trails and paths, whatever, but in a place that you don't know, it's

more challenging because you don't know where you're going and you don't really recognize anything.

Int: Does it make you feel uncomfortable?

Christine: Uncomfortable because you can't really get lost in the Endowment Lands because practically you know the area, but with Lighthouse Park, well you're really depending on yourself, you just have to wait and see what happens next (short laugh) I think and that's what it is!

Int: Even though Lighthouse Park is very well defined because of the ocean all the way around and it's about half the size of the Endowment Lands...

Elizabeth: You're doing something for the first time...

Int: Okay.

Elizabeth: ...always a lot of the time, well not always, but some of the time that you're doing things for the first time and you may be not quite sure of yourself, not quite sure of your orienteering skills, and it makes quite a big difference (pause) because, okay, if you're not really sure about orienteering. But if you go out to the Endowment Lands, well you know that you're going to be able to recognize things, and so if you don't really follow the map, you can still find your way around. In Lighthouse Park if you couldn't find your way around, nor were we all that great at orienteering, but we knew how to do it. We knew what we were supposed to do but - whether we did it or not ...

Int: It was a different matter! Okay, Christine, Elizabeth keeps mentioning that magic word "the map". Now how does a map fit into the experience of familiar area such as UEL and the

"mystery" which we feel as the uniqueness of Lighthouse Park? How does the map fit into all of this?

Christine: Well, when I was carrying the map around and I sort of knew the Endowment Lands, even if I couldn't read the map very well, I could sort of guess, "oh this must be that trail, like it can't be this one" sort of thing. But when I was down at Lighthouse Park, like the first and the second control that I located, I wasn't really sure because you had to go down the sort of rocky trails whatever.... There was this big trail in front of me, and I just couldn't make up my mind which one it was, so I just took the wrong one and had to go back because I had no idea, right?

Int: Yes, so what made you go back?

Christine: I just had to look at it, but like on the map, it was very clear which trail you had to take, but when you're in that area, like here's a small little tiny trail, you know, it's really not significant, so you're so tempted to take the one that's right in front of you.

Int: So what does that decision teach you about yourself?

Christine: (obscured by laughter)... enough. No, I don't...

Int: Yes. What does that mean?

Elizabeth: Follow your instincts. And also your judgment....

Int: Yes. Keep going.

Elizabeth: Umm....

Int: Well, go back a step. Here, you've become comfortable in the Endowment Lands because it was familiar and you could I guess "wing it" is an appropriate expression! You could always get

back and feel good because you'd made it around but you weren't really very conscious of the things that you were doing. So the skills that you were really using?

Christine: Actually, you didn't really need skills.

Int: No, okay, so let's put that skill into the context of the unknown such as Lighthouse Park, and what are the skills that you really had to use. I'm not talking just about map reading on its own. I mean there are other things as well. What made you successful?

Christine: I guess when I was down there, you realize that you can't just guess and just sort of hope for the best.

Int: Okay, that's one thing..

Christine: Like, if the map says you take the trail on your left and you have to do that, you realize you can't get back when you don't know the place because you don't know how to get back to the original point, so you are "forced" to go through whatever difficult obstacle you meet.

Int: Yes, what have you been given to help this particular endeavour?

Christine: The compass.

Int: Yes. The compass gives direction where we really need it.

Christine: Didn't really need it.

Int: No, it was to be used in a general way so long as the red magnetic needle was aligned with the north red arrow so that was fine. Any more skills you felt that you had to call upon?

Elizabeth: It makes you much more aware of what was around you.

Int: Yes.

Elizabeth: In general. A lot more because you know when you're somewhere familiar you know that it's a certain length of time before you're going to reach a certain spot. But when you don't know where you are (laughs) you are not sure, and you have to keep looking out for things.

Int: So you are suggesting that every time you go into a unfamiliar area then you tend to be a little bit more aware of what is around you?

Elizabeth: Oh, definitely.

Int: Okay. Would that be a general rule but not necessarily with a map in your hand? What I'm trying to get at I think here is in a familiar area do you really use the map?

Elizabeth: Not totally.

Christine: No.

Int: If you think maybe you didn't use it so much, then how was the map used in Lighthouse Park? I think there might be a difference?

Elizabeth: Well, in the Endowment Lands, I looked for the junctions and the controls. In Lighthouse Park, I looked for everything (laughter) because I did not want to miss anything.

Int: Good! Did you try and look for everything?

Elizabeth: And I really kept thinking and looking at the map many times, like glancing, you know, have I missed anything?